

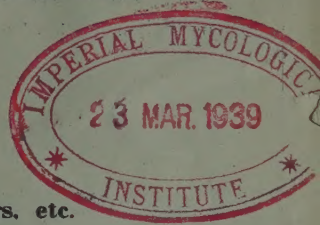
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Vol. XL. No. 2

FEBRUARY 6th, 1939

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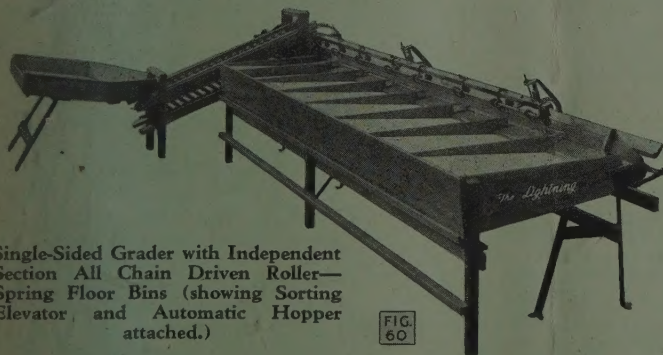
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Re-Working Trees

Deheading and Refurnishing Methods Recommended

BECAUSE of the lack of attention subsequently given to trees, the reworking of unsuitable varieties is sometimes less successful than it should be.

The methods used in the actual reworking are somewhat varied, but fall mainly into two classes:—(a) that in which the tree is deheaded and the selected variety worked on to it by means of strap and bark grafting, and (b) the refurnishing method, by which the original framework of the tree is retained and the new variety worked on to it by means of side grafting.

With the deheading method, it is the accepted practice to leave as many as possible of the original small twigs and spurs below the graft. These growths serve several useful purposes, providing some foliage to assist in the elaboration of sap, for it must be remembered that when the top is cut off a tree the major part of the foliage is lost and the roots thereby suffer partial starvation until sufficient new growth is made to restore the balance between root and top, and counteracting sun scald by providing shade for the lower part of the tree until such time as the new top has developed sufficiently. Again, the extra growth assists greatly in protecting the tender new shoot from his graft from damage by sun and wind.

However, if no attention is given to these lower growths after grafting there is a danger that some of

them will outgrow the scions to the detriment of the latter. To guard against this, therefore, the grower should make periodic inspection of the grafts, and if any particularly strong shoots show signs of outgrowing the scions they should be pinched back.

Once the grafts are firmly established and growing well, the lower growth can be thinned out from time to time until there is little or none left. This thinning out, however, should be gradually done over a period, and should not be completed until such time as the top has made sufficient growth to compensate for the loss of it.

It is very important that graft ties should be cut about a month after insertion of the scions, as by that time the grafts have either taken or missed, and the ties serve no further useful purpose. In fact, if they are left on they are liable to do a great deal of harm.

The refurnishing method is somewhat simpler. Following the grafting, new shoots of the original tree will develop from various points along the limbs. These should be eliminated gradually, removing the stronger shoots first, cutting as close as possible to the limb to obviate the chance of secondary growths arising from the base buds. The amount of new original growth is controlled to some extent by the success of the side grafting, and in any case, provided there is a reasonable "take" and the

"The Fruit World Annual"

THE 1939 issue of "The Fruit World Annual" has been published. This carefully compiled and well-printed magazine is of more than mere interest—it is of commercial value—to the fruit-grower and to those associated with the Australian fruit industry in its many phases.

A particularly valuable section is the classified index of orchard pests and diseases. Its usefulness is greatly enhanced by the excellent color-plates which accompany the descriptions of the various insect and fungoid pests and diseases of trees, vines, vegetables and flowers. Even experienced growers are frequently unable to classify on sight many of the insects that are listed in this collection, and to these growers the illustrated pages will be very useful; they will be even more useful to the less experienced grower, and to the members of Young Farmers' Clubs they will be invaluable. The grower is not only told the common and technical name of the pest; he is told how to combat it with the approved spray, bait, lure, or cultural method. In addition to this information, there are articles by well-known authorities on the subject of orchard pests and their control.

grafts do well, there should be very little of this original growth by the second season.

When cutting out, if a good new shoot has developed from a position in close proximity to where a scion has "missed," it can be left and budded during the following Autumn.

The statistical features of the issue are of especial interest. For instance, the magnitude and importance of the fruit industry in Australia is shown in an article containing the information—which will be a surprise to many inside and outside of the industry—that approximately 400,000 acres are devoted to commercial fruit-growing in this country. Figures of the areas in each State, with varieties and yields per acre and value of production, make an interesting story which tells in facts and figures the economic importance of the fruit industry.

World Apple production is also dealt with, and details are given of the annual crop of between 500,000,000 and 600,000,000 bushels.

Other special articles deal with orchard soils and tree nutrition; fertilisers for trees and vines, canned fruit and jam industries, dried vine and tree fruits, cool storage of tree fruits; Apple and Pear growing, fruit grading regulations, descriptions and illustrations of packing charts for various fruits, interstate trade in fruits, imports and exports, marketing systems, a complete list of growers' organisations, and much other useful information. The magnitude of the interstate trade in fruit and vegetables will come as a surprise to many.

"The Fruit World Annual" is on sale at 1/6. It is aptly described as "a book of daily reference for growers of Apples, Pears, vine, citrus and stone fruits, exporters and market growers."

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Cover 1.

News of the Month

Fruit Crops.

CONDITIONS have been generally unfavorable for the development of the fruit crops in most of the mainland States. The long spell of dry weather has unfortunately continued in the eastern States. There have been hot dry winds and disastrous bush fires. Fruit crops are light in South Australia and the Eastern States. Western Australia is shaping for an abnormally heavy crop, despite the hailstorm at the end of January, which caused losses in some districts. Tasmania has a moderately substantial crop, but the interesting fact is that the fruit is wonderfully clean. There will be a heavy call on Tasmanian Apples for export and the Australian markets.

Bush Fires.

THE MOST DISASTROUS bush fires in Australian history occurred in Victoria when 55 precious lives were lost, homes and forests were destroyed estimated at between £1,000,000 and £2,000,000. The whole community has been called to contribute clothing, food and money to the sufferers, and a commission with wide powers has been appointed to enquire into the whole problem. Some of the fires were caused wilfully and others through carelessness.

One outstanding lesson is that more power must be vested in a competent body — probably the Forests Commission, with an enlarged franchise.

Soil Erosion.

THIS AGAIN brings up the question of soil erosion on which subject this Journal has spoken firmly in the past. Already vast

damage has been caused by soil erosion through unscientific procedure on the part of land owners and graziers.

Already considerable harm has been done to the Hume Dam by silt washed down from the slopes of mountains in the upper reaches of the Murray. Because of the lack of a central authority, trees are still being removed from the water-shed. Serious warnings have been issued by the Forestry Commission; the Australian Natives' Association issued a convincing booklet, but the work of devastation goes on. Producers' organisations are urged to carry resolutions of protest and to take up this matter with their members of Parliament.

The Bank of New South Wales has rendered good service by directing attention in its January publication to the depreciation of soil productivity through erosion. Maps are included and the subject is capably dealt with from an Australia-wide viewpoint. Here are some concluding sentences: "The damage done by soil erosion has reached serious proportions, and is progressing at a rate not recognised even by those most directly concerned. The most urgent need is that there should be exact scientific observation of the conditions causing erosion and of its extent . . . also for properly equipped stations to investigate scientifically the technical problems connected with soil erosion control. . . . The clash of interests over the use of some regions must be checked. . . . There is need for a changed attitude towards land, not only by men on the land, but also by the public as represented by Government action. . . . No time should be wasted in grappling with this problem so fundamental to the common welfare."

Never was the need so urgent for prompt attention, the first essentials being an adequate survey and power to be vested in a body to take the requisite action.

Personal

Mr. T. J. McKinley, who represents the Tasmanian State Fruit Board in the United Kingdom, recently returned and has delivered addresses in Tasmanian fruit-growing areas on various aspects of the industry.

Mr. H. C. Quodling, who retired at the end of the year from the position of manager of the Queensland Agricultural Bank, was presented with a complete cutlery service by the staff. The presentation was made by the Minister for Agriculture, who paid a very high tribute to Mr. Quodling's services to the State.

Three State (Fruit) Supervising Officers are going to London this month to examine the outturn of Australian shipments of Apples and Pears. These are Messrs. J. M. Ward (Victoria), S. H. Grueber (Tasmania), and A. G. Strickland, M.A.G.Sc. (South Australia). They sail by the S.S. "Stratheden" which leaves Melbourne on February 21. We wish all success to these experienced officers on their important mission.

Mr. R. A. Boyle, M.Sc., of Nitrogen Fertilizers Pty. Ltd., who have been located in Sydney for the past three years, has returned to Melbourne as Chief Technical Officer of the company. His address is now 360 Collins-street, Melbourne.

PERSONAL—(Continued)

Mr. T. R. Toovey, representative in Australia and New Zealand for the Port of London Authority, spent three weeks in New Zealand during January on business. He sailed from Sydney on the "Awatea" on Friday, January 6.

MAN LOSES ARM DRIVING CAR.

Mr. R. Werner Hit by Transport.

Mr. Rudolph Werner, 43, of Findon-avenue, Kew, Victoria, a member of the firm of R. Werner & Co. Pty. Ltd., engineers, of Burnley-street, Richmond, lost his right arm recently in an unusual accident at Cranbourne.

Mr. Werner, who was driving to the city with two companions, had his right arm resting on the window of his car, when he was struck by a motor transport. His arm was torn off.

He was rushed to Alfred Hospital, where a further amputation was made.

News in Brief

Fourteen different farm and orchard products are now under protection (control organisations) in the United States. Similar bodies in process of formation will deal with canning Peaches, Cauliflowers, Lemons and Limes.

A new Tomato, absolutely white in color, has been produced by Dr. Jonas Clark, farmer and physician, of Gilroy. This has been produced after eight years of experimenting, by saving and replanting seeds from one particular vine of yellow Tomatoes that were unusually light in color. Further developments will be watched with interest.

Deciduous fruits in South Africa are now coming on to the market regularly each year in the middle of November. A few years ago, very few deciduous fruits were ripened in that country before Christmas.

The N.S.W. Government is completing plans for the evacuation of

residents of the Murrumbidgee Valley below the Burrinjuck Dam in case the structure collapses under a great flood similar to that of 1925. A sum of £1,850,000 is to be expended on reconditioning and strengthening the dam. The chief towns affected are Wagga, Narandera, Hay and Balranald. Warning will be given by telephone and wireless, and fleets of transports will be available, should evacuation become necessary.

The steamer "Melbourne Star," which left Melbourne on January 21, carried 858 half-bushel cases of Plums consigned to London.

The great heat wave in January, following a hurricane during December, has so affected supplies of fruit and vegetables in New South Wales that there is a marked scarcity, and prices have risen to unusual levels. All kinds of vegetables are dearer. Egg prices rose 2d. a dozen because of disastrous losses of laying stock in all parts of the State. For the

first time in many years, a consignment of green vegetables, consisting of Onions, Cabbages and Peas, reached the Sydney market from New Zealand.

In Sydney markets recently, high prices have been paid for fruit because of the scarcity due to drought and gale losses. Nectarines realised 18/- per case of nine dozen and nine, and Victorian Nectarines in bushel cases made 27/6. Peaches have sold to 13/- per case. Williams Favorite eating Apples, selling last year at 8/-, have realised 16/-. Immature green Lemons have sold to 15/-.

As a result of strong representations by the Vegetable Growers' Association, the Metropolitan Board of Works has not applied the threatened prohibition on the use of sprinklers on vegetable crops by those who make application for permission, which may be granted on certain conditions.

Big trucks which block rights-of-way at the Victoria Market have been the subject of complaints by the Vegetable Growers' Association to the Markets Committee, which has been asked to keep the avenues clear.

Because of the continued dry weather, Turks, Marrows and Melons are setting badly, and the same trouble is seriously affecting Citron Melons. Root crops are also faring badly through the lack of rain.

Tests made by the Council for Scientific and Industrial Research have given results which are described as promising for the commercial extraction of citrus juices. The work has been done only on a small experimental plant at the Council's station at Homebush, N.S.W. It is emphasised that the results will not be conclusive until tests have been made with a much larger plant, part of which will be imported.

Terrific heat, up to 122 degrees under shady verandahs and 116 on the official thermometers, was registered on the Murrumbidgee Irrigation Areas during the recent heat wave. Heavy damage was done to Prunes, which had not ripened sufficiently to be of any use after falling. Elberta Peaches and Angelina Plums suffered little damage. Navels showed considerable scorching.

Murrumbidgee Irrigation Area orchardists have, up to the present, obtained all the water required for their properties. At a conference representing a very large area and a variety of interests, unanimous support was accorded to a scheme for ensuring an increased and unfailing water supply by a diversion from the Snowy River.

One of the few good results of the recent heat wave was the killing of myriads of Red Scale. In all of the hot inland districts a heavy mortality of scale was reported.

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SNOW

GENUINE BLACK
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NEWS IN BRIEF.

Severe gales have affected crops in Tasmania, Raspberries suffering heavily, and there has been considerable loss of Apples and Pears. Granny Smith, Cleopatras and Jonathans were the principal Apples to suffer. Much of the Apricot crop is of small size owing to the dry weather.

Raspberry growers in Tasmania are concerned at the limitation of the export assistance to £4,000 as against £8,000 last year. It is contended by growers that last year 1,000 tons of Raspberries were allowed to rot, and later it was found that the bulk of it could have been sold had it been processed, as there was a shortage overseas.

Shepparton cannery is installing a can-making machine that turns out 300 sealed cans a minute. The machine cost £20,000 in America. Another machine costing £5,000 in England is for making a new line of tall 1 lb. tins.

Turkeys worth more than six million dollars are placed on the holiday markets by farmers' co-operatives in 21 States of America. From Utah alone the value is one million dollars.

It is anticipated that the New Zealand restriction on imports of citrus fruits from the coastal districts of N.S.W. will be eased this year, as a result of direct negotiations between the Australian Government and the Prime Minister of New Zealand, Mr. Savage.

Experiments for the control of Banana Leaf Spot in northern N.S.W. have indicated that the disease, which was responsible for the loss of approximately to 25 per cent. of the fruit, can be controlled by the application of fungicides during the Summer months. Five sprayings of Bordeaux mixture have given complete control, and good results have been obtained from two sprayings.

Forecasts of the 1939 fruit crop in Western Australia, made by the Supt. of Horticulture, Mr. A. Wickens, indicate record yields of Apples and Pears. Peaches and Plums will also be heavy crops. Vine fruits generally will be heavy, but Sultana yields will be lighter than last year's.

THE CUTWORM PEST

Wrecker of Many Crops - Life History - Control Methods

(By R. T. M. Pescott, M.Agr.Sc., F.R.E.S., Entomologist, and T. W. Hogan, B.Agr.Sc., Asst. Entomologist, Victorian Department of Agriculture.)

In certain seasons, Cutworms are responsible in Victoria for severe losses to Summer fodder crops, to cereal crops, to market garden crops, and, in some cases, to fruit crops. They are pests of world-wide importance, and derive their name from their method of feeding on the stems and foliage of plants, cutting the stems off at or above ground level, with the resultant destruction of the attacked plant.

In Victoria, three species of Cutworms commonly occur, the two "climbing Cutworms" or "army worms," *Persectania ewingi* Wwd. and *Cirphis unipuncta* Haw. being most commonly found attacking grasslands and cereal and other crops, while the Cutworm known in America as the Corn Ear Worm, *Heliothis obsoleta* Fabr., attacks such crops as Maize, Potatoes, Tomatoes, Tobacco and the like. It is known popularly here by various names such as the Tomato Worm, the Tobacco Budworm, and the Maize Grub.

Practically all economic plants are subject to attack, the chief being cereal crops, Flax, Maize, pastures, Tobacco, Tomatoes, Potatoes, Onions, market garden crops, flowers, fruit trees and young nursery stock.



An adult Cutworm Moth (*Heliothis obsoleta* Fabr.). (Enlarged).

Life History.

Cutworm caterpillars are the larvae of night flying moths, which usually are found flying early in Spring. These moths lay their eggs chiefly on moist soil under weeds and grasses, but, in some cases, on the foliage itself. After a short incubation period, these eggs hatch into small Cutworms which feed, at first, on the young growths of any plants present. They shelter in the soil, just under the surface of the ground, during the

day, coming up to feed at night. After four to six weeks of feeding, during which time they moult or shed their skins some five or six times as they increases in size, they become fully grown, and are then about 1 inch to 1½ inches in length, greyish to greyish green or brown in color, and generally possessing a "greasy" appearance. As many as 100 of these larvae have been found under a single Potato plant or a young fruit tree in the nursery. When fully grown, these Cutworms pupate in the soil, later emerging as the adult moths, and the life cycle is then repeated. There are usually two broods in one season.

Control.

Of primary importance in the control of Cutworms attacking any of the previously mentioned crops is the elimination of weed plants under which the Spring eggs are deposited. Careful attention to this factor will, in a great measure, minimise future losses.

Poison Baits.

The generally accepted method of controlling Cutworms is the use of poison baits. These are prepared from the following formula:—

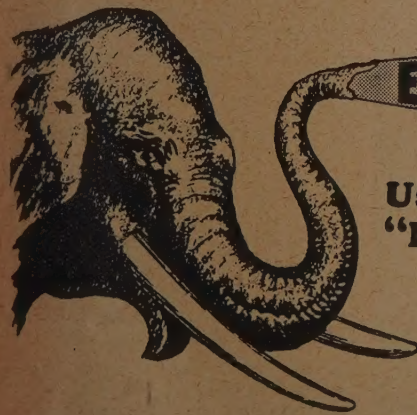
Bran	24 lb.
Paris Green	1 lb.
Water	3 gallons
Salt	8 oz.



Typical Cutworm larvae. (Enlarged).

During the day they may be found coiled up in the soil, as shown in the lower illustration.

(Illustrations courtesy Victorian "Journal of Agriculture.")



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Extract from "BETTER FRUIT," March, 1937, by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman: CODLIN MOTH COVER SPRAYS—"Ever since the imposition of an arsenic tolerance in 1936, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and extensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codlin moth control."

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Upon it!**

FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

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THE ELECTROLYTIC REFINING & SMELTING COMPANY OF AUSTRALIA LTD.
PORT KEMBLA, NEW SOUTH WALES.

The Right Material for Plant Disease Prevention and Control
GUARANTEED 99% PURITY

GRADES—Mixed Crystals, Fines, Granulated (Snow), Packed in Suitable Containers for Growers' Requirements.

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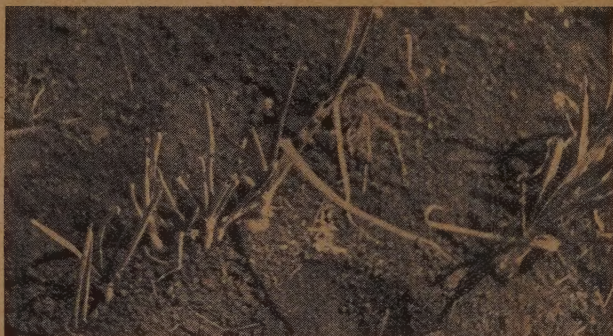
BOOKLET—"Better Yields by Spraying with ESA Bluestone" obtainable on application to Elder Smith & Co. Ltd.

It was shown first in New South Wales and it has been our experience in Victoria that the addition of half a dozen crushed Lemons to the above formula increases its effectiveness.

The bran and Paris green should be thoroughly mixed together in a dry state, and then the water in which the salt and crushed Lemon have been dissolved slowly added until a damp (not sloppy) mash is formed. If Paris green is not obtainable then arsenite of soda can be substituted, using 12 oz. of arsenite of soda for every 1 lb. of Paris-green in the original formula. It should be pointed out that this bait, however, is not as effective as the one containing Paris green and should be used only when Paris green is not obtainable.

The bait should be scattered over the ground in the late afternoon so as to be fresh and attractive to the Cutworms when they emerge from the soil to feed in the early evening. It should be broadcast uniformly over an affected area in the case of a young crop, or spread along the rows of an affected crop, e.g., Potatoes, Tomatoes, or Onions. As a rough guide, about 100 lb. of prepared bait (containing roughly 45 lb. of dry bran) per acre is necessary for a single treatment. In cases where an infestation is abnormally severe, however, it may be necessary to considerably increase this quantity of bait per acre, or even to bait an acre several times to obtain a satisfactory control.

It should be remembered that this bait is poisonous, and should be



Onion plants damaged by cutworms. Note the nipped-off tips.

(Illus. courtesy Victorian "Journal of Agriculture.")

handled by responsible persons only, and kept away from all animals.

Control in Tobacco: Cutworm control in Tobacco in Victoria is now considered as part of the routine in growing this crop. The method used is to dust the plants immediately after transplanting and at fortnightly intervals until "topping time" with a mixture of 1 lb. of arsenate of lead powder and 15 lb. of pollard or a mixture of 1 lb. of Paris green and 35 lb. of pollard, by means of a finely perforated tin can which is roughly shaken on each plant in turn.

Control in Tomatoes: With Tomato crops, the young plants at transplanting time should be dipped in an arsenate of lead solution, 1 oz. of paste to 1 gallon of water before planting. After planting, the plants should be regularly sprayed with arsenate of lead, 1 lb. of paste to 16

gallons of water or dusted with a 50 per cent. arsenate of lead dust, or, if a severe outbreak of Cutworm occurs, poison bran baits should be broadcast over the affected area.

Control in Maize: The treatment of Cutworms in well-established crops of Maize is considered both impracticable and unsound, but where a young crop of Maize is being attacked by Cutworms migrating from neighbouring paddocks considerable success can be obtained by the use of poison bran baits. (See control in crops—migration of Cutworms.)

Control in Pastures, Crops, etc.: Where Cutworms are attacking pastures or crops fairly generally, and the value of the crop is such that it warrants extensive control measures, poison bran baits should be used as described above. Quite frequently, however, Cutworms migrate from an

uncultivated to a cultivated area, or from one cultivated area to another, and in such instances the spreading of the bait in front of the moving Cutworms (as with Grasshoppers) will frequently check the outbreak.

Ploughing a furrow a short distance in front of a line of migrating Cutworms, with a steep side of the furrow facing the Cutworms, is another method that may be used. When Cutworms are concentrated in this ploughed furrow, they may be destroyed mechanically or poison bran bait thrown to them.

Control in Lucerne: When Lucerne crops become abnormally affected with Cutworms, it is usually advisable to cut the crop as soon as possible so as to obtain some produce, at the same time destroying a large number of Cutworms present, thereby increasing the chances of the succeeding crop being clean. Chemical methods of treatment are usually not practicable in such a crop.

Control in Fruit Trees: Where cutworms are commencing to attack the young fruit on Apple and Pear trees, increasing the normal arsenate of lead Codling Moth sprays from 5 lb. of paste in 80 gallons of water to 8 lb. of paste in 80 gallons of water will usually prove satisfactory.

APPLE LEAF JASSID IN S.A.

Control, by Spraying.

UNTIL ABOUT THREE YEARS ago, South Australia was free from the Apple Leaf Jassid, which is known also as the Apple Leaf Hopper or Canary Fly. This insect, which has been known in some of the other States for 20 years, originally came from France. It is found on Apple, Quince and Plum trees, and also on cultivated Hawthorns of the deciduous type.

In an article contributed to the South Australian "Journal of Agriculture," Mr. H. K. Kemp, Research Officer of the Department of Agriculture, states that the insect hatches from eggs laid in the bark during the Autumn. The eggs hatch in Spring and the young Jassid crawls to the nearest leaf. Considerable numbers may congregate on one leaf, causing distortion, curving back and partially protecting the insects. The adult insect feeds on leaves for a week before mating, and then dies; the eggs of this generation are laid in the stems and midrib of the leaves and hatch in mid-Summer. Under warm conditions a third brood may occur in the Summer.

Control Measures.

Fruit, as well as foliage, can be discolored and disfigured by Jassids. Control measures recommended are:

(1) Spraying at the appearance of the first few adults of the Spring brood.

(2) Spraying in January, at the first appearance of adults of the second brood, but this is harder to gauge and the conditions are not so favorable for control.

(3) Forty per cent. nicotine sulphate at 1 in 800 gives very efficient control, the spray killing both by direct contact and by the fumigant effect of the fumes.

(4) Where extra time can be devoted to heavy spraying, 1 in 1,600 nicotine is effective, but the important fumigant effect is not so marked and this strength is not generally recommended.

SHOWS TO COME.

Diamond Creek—March 11.
Somerville—March 16.

Gargoyle WHITE Spraying Oil

will keep them all
Healthy and Fruitful

VACUUM OIL COMPANY LTD.
(INCORPORATED IN AUSTRALIA)

Bugs Attacking Fruit Trees

DURING THE PAST TWO MONTHS, Rutherglen Bugs have appeared in great numbers in some localities. Favorable breeding conditions are responsible for the rapid hibernation and development in grasslands and weeds during the early Spring. Increases under these conditions are usually followed by invasion of field and vegetable crops, such as Potatoes, Beans, and Tomatoes. Later, orchard trees may be attacked.

Feeding in thousands, the small bugs cluster closely about the plant, causing drooping of the foliage and finally wilting of the plant. In orchards, Peaches, Apricots, Nectarines, Prunes and Cherries may become so pitted by the feeding punctures of the bugs that the fruits become spoiled both as fresh and canning fruit. In addition to the pitting, many fruits exhibit characteristic long exudations of gumming material which makes the injury very obvious. Premature falling of the more seriously injured fruits and curling of the leaves, such as that produced by aphids, may also be noted.

Dicyphus sp.

It is of interest to record a second species attacking orchard trees at Young and on the Murrumbidgee Irrigation Areas. Previously, this species had been reported as a pest of vegetables, including Beans, Tomatoes, and particularly Cucumbers. This insect belongs to the family Miridae, and is a species of Dicyphus.

This green bug is not as common as the Rutherglen Bug, but is larger. Its feeding punctures cause a pronounced injury to Nectarines and Peaches, and in addition to pitting, a considerable exudation of sap takes

place, rendering the fruit unsightly. Infestation of orchards by both species (Nysius vinitor and Dicyphus sp.) takes place during periods of hot, dry weather, and a cool change following causes a considerable reduction of numbers of the trees. Invasion of an orchard may also take place where adjacent crops are cut and the natural shelter for the bugs destroyed.

Control Measures.

Control measures usually include some form of smudging or smoking, and although systematic work along these lines is partially effective for a short period, the respite gained is too short to permit satisfactory ripening and harvesting of fruit.

Dusting the trees with 2½ per cent. nicotine dust will repel the bugs, and the residue of lime, although unsightly, acts as a deterrent. Pyrethrum dust and nicotine dust mixed in equal quantities has also given good results, and is more effective than the nicotine dust alone in killing the bugs.

A dust consisting of one part of pyrethrum and two parts of talc has also given good kills. This mixture might, therefore, be used in preference to the more expensive pyrethrum-nicotine dust mixture.

A mixture which was tested with very satisfactory results against the green Dicyphus bug is a Japanese proprietary pyrethrum product. This is sprayed on the trees at the rate of 1 lb. to 50 gallons of water, and has been very effective. Pyrethrum powder at the rate of 3 lb. to 50 gallons, plus 2 lb. soft soap may be used instead of the proprietary product, but the mixture should not be allowed to stand.

CONTROLLING CODLING MOTH WITH STEAM.

Finding that the Codling worm hibernated in the rough bark of the trunks and crotches of Pear trees, Dr. F. G. Gunn, a well-known Californian Pear grower, made the further discovery, says "Pacific Rural Press," of California, that hot water at a temperature of 124 deg. Fah. killed these pests in about 3 seconds, and that a temperature of 135 deg. seemed to produce instant death. Since temperatures much higher than these are not injurious to Pear trees, Dr. Gunn mounted a boiler on a truck, connected ordinary spraying hose with a nozzle slightly larger than usual, and steamed those parts of his trees where the Codling worm had been found.

With the safety valve on the steam engine set at 15 lb. he obtained a nozzle temperature of 245 deg., or over 100 deg. higher than that necessary to kill the pests. It was found that the steam penetrated into all the cracks and "the kill" seemed to be complete. In conclusion, it is pointed out that steaming the lower portion of the trees, where the rough bark offers a hiding place for the pests, is a fairly inexpensive method after the initial outlay has been made on the equipment.—"Implement and Machinery Review."

APPLE PACKERS WANTED IN W.A.

Mr. B. Hickling, Secretary of the West Australian Fruitgrowers' Association, Mt. Barker, W.A., advises that Apple packers are required in Western Australia. At least eight weeks' work is guaranteed, at three-pence per case off grader. Second class boat fare will be paid one way. Packers are to arrive on the "Manoora" which leaves Melbourne on February 14.

CODLING MOTH.

Lead Arsenate and Nicotine Sprays.

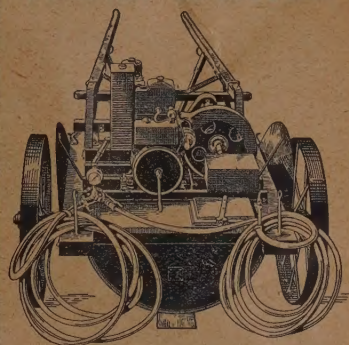
CODLING MOTH (Cydia pomonella) infestation generally becomes noticeable at this period of the year, and growers may find some difficulty in keeping losses within reasonable limits. This sudden increase is due to the activity of second brood moths, the earliest of which hatch out about the last week in December. Notes on the subject have been compiled by officers of the Entomological branch of the New South Wales Department of Agriculture.

Provided spraying has been regularly and efficiently carried out, fallen and infested fruit collected and destroyed, and bandages inspected, growers should not have any difficulty in keeping losses below 5 per cent. It is well to realise that more control is obtained by killing grubs in the early part of the season than later on, when breeding has finished.

In districts where Codling Moth is difficult to control, spraying should be continued at intervals of three weeks until the fruit is harvested. Lead arsenate powder, at the rate of 3 lb. per 100 gallons, is the basis for all really satisfactory Codling Moth spray programmes. White oil emulsions at the rate of 1 gallon per 100 gallons of spray, combined with lead arsenate, will be found to exercise the best control. This is due to the fact that a greater load of lead arsenate is deposited on the fruit, and still more important, that the white oil is capable of killing the Codling Moth eggs. In order to obtain the best results from the use of this spray it is essential to spray thoroughly as many of the eggs will be found on the leaves away from the fruit.

The most satisfactory non-arsenical spray now available is white oil 1 gallon, plus nicotine sulphate 1 pint per 100 gallons. Fruits approaching maturity cannot be overloaded with lead arsenate, as an undesirable blotching occurs on the highly colored varieties. Provided early control measures have been reasonably carried out, the use of white oil-nicotine sulphate mixture is to be recommended. The fruit generally has a better appearance and the late infestation of moth is reasonably well controlled.

— THE — BAVE-U POWER SPRAYER



Write for Particulars of the
UNDERSLING MODEL
Russell & Co.
Box Hill, E.11, Victoria

DISEASES OF BANANAS.

Control of Squirter and Black-end.

AMONG the most important diseases affecting Bananas are Squirter and Black-end, which are market diseases, rather than diseases of the plantation, although the fungi which causes them contaminate the fruit before it leaves the plantation.

The symptoms of Squirter consist of a dark, watery rot of the fruit pulp, which begins during the ripening process and proceeds farther while the fruit is in the retailer's shop or the consumer's home. It is most prevalent during the cooler months of the year, but occasionally it occurs in Summer.

Black-end is a rot or discoloration of the stem caused by a number of different fungi. As in the case of Squirter, the fungi gain entrance through the broken stem-end, and the percentage of infected fruit in a consignment is to some extent an indication of the amount of injury the fruit has received during the breaking by the hands.

Case Dipping.

It has been shown that the immersion of the fruit as singles in 1 per

Destroy Codlin Moth!



"Aero brand" contains not less than 31.5% Arsenic Oxide, 60% Lead Oxide, not more than .25% Water Soluble Arsenic.

BICKFORD'S
"Aero" BRAND

ARSENATE OF LEAD

By every Test Bickford's "AERO" Brand is Best

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TASMANIA (Southern Districts): Port Huon Fruitgrowers Co-op. Association Ltd., Davey Street, Hobart.

PROTECT

Your **LEMON** and **ORANGE**
Trees from Scale and Aphid—

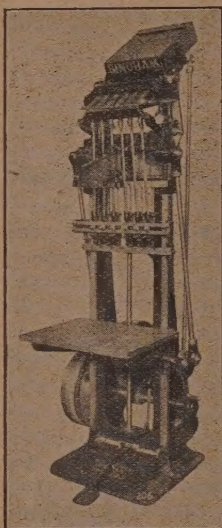
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and see an immediate improvement
in health and yield.

Obtainable from all Seedsmen
and Nurserymen

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and of Proved
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The Value of a Non Acid Forming Nitrogen Fertilizer

is widely recognised, and its
superiority on many soils which
have a natural acidity has been
clearly demonstrated.

Chilean Nitrate of Soda

- Promotes vigor.
- Increases yield.
- Improves quality.
- Reduces cost of liming.

Effective!

All the nitrogen is in the nitrate form
immediately available to the plant
without change.

Economical!

Vital Elements, for instance —
SODIUM, BORON, MAGNESIUM,
IODINE—are actively present in
Chilean Nitrate of Soda

These Vital Elements are known to be essential
for normal plant growth and animal nutrition.
CONSIDER the very quick effect on growth and
the strongly repairing effect on soils.

NOT a single grower who has used it has any-
thing but praise for

Chilean Nitrate of Soda

Guaranteed Purity 98/99% — 100% Efficient.

Packed in 1 cwt. strong jute waterproof lined bags.

CLEAN, DRY, AND EASY TO HANDLE.

Write for Literature.

ALL MERCHANTS.

AGRICULTURAL SERVICE,

44 MARGARET STREET, SYDNEY.

G.P.O. Box 2037L.

cent. suspension of Shirlan A.G. be-
fore packing gives complete control of
Squirter. This, however, was too
slow, and tests of case dipping after
packing have given excellent results.
Complete control of Squirter was ob-
tained by means of the case dip, and
Black-end was practically eliminated.

In view of the seriousness of the
diseases and the success of the ex-
periments, the N.S.W. Department of
Agriculture recommends that fruit
dispatched from plantations during
the Winter and Spring be given a
dip in a routine way before taking to
the train. A dip of Shirlan A.B. at
0.5 per cent., which is effective, may
be prepared by dissolving 1½ lb. of the
preparation in 30 gallons of water.
The time of dipping should not ex-
ceed 30 seconds.

WOODINESS IN PASSION FRUIT.

Prompt Measures Recommended.

The woodiness disease of Passion-
fruit is caused by a virus which is
transferred by mechanical means to
healthy plants. The best known
symptom is that of thickening and
hardening of the fruit itself, the tis-
sues of the skin become woody, and
the fruit is mis-shapen and usually
reduced in size, the pulp either fails
to develop or is present only in re-
duced amounts, and is of poor quality.
Diseased plants are stunted, leaves
are puckered and malformed, and the
terminal shoots are frequently paler
green than normal, with leaves either
rolled sharply downward or marked
with dark and light green areas
forming a mosaic.

Tests in 1938 demonstrated that the
virus was transmitted by several
species of aphids, viz., *Myzus persi-*

cae, or *Green Peach Aphid*; *Macrosi-*
phum solanifolii, or *Potato Aphid*;
and by two dark species of Aphids be-
longing to the group that includes
Aphis rumicis, *Aphis medicaginis*,
etc.

Control Measures.

Control Measures aim particularly
at prevention during the early
growth of a plantation. Growers
should become familiar with the foli-
age symptoms of the disease, especi-
ally in seedling plants. All planta-
tions of old vines should be com-
pletely destroyed as soon as they be-
come unprofitable. Healthy seedlings
only should be planted, and then only
when no diseased vines are in the
vicinity. In the early stages of de-
velopment of the new plantation, dis-
eased vines should be removed and
destroyed, and the hands well washed
in soapy water before healthy vines
are touched.

In view of the fact that the Passion
vines are rarely subject to infesta-
tion by aphids, there is a definite pos-
sibility that spread of the disease may
be checked also by the use of aphid
destroying sprays, e.g., nicotine sul-
phate (1 pint to 75 gallons water plus
3 lb. soap) as soon as aphids are
noticed. Use of such sprays in seed-
ling plots of Passion plants is
strongly recommended.

The Rothamsted (Great Britain)
Experimental Station has driven a
cultivator through the long-held idea
of "the more cultivation the better."
Twelve years ago a beginning was
made with experiments to measure
the effect of cultivation on crop
yields, in the full expectation that
the more thorough the cultivation the
better would be the yields. These ex-
periments have consistently gone to
disprove that idea.

*Australians Have a Great
Continent to Develop . . .
The Work Must Go On —
We Can't Stand Still.*

*Roads must be made, Railways extended, Bridges
built, Water Conservation Works expanded, Sewerage
Schemes advanced . . . In short, the requirements
of a modern, progressive people must be met.*

**THE JOB IS FOR OURSELVES —
NOT SOMEBODY ELSE!**

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SAVINGS IN THE**

Commonwealth Loan

*Interest is at the rate of 3½%, payable twice yearly.
Apply to any Bank, Savings Bank, Money Order Post
Office, or Stock Broker.*

H. S. Casey

Treasurer.

BLACK SPOT ON PEARS

A Short Statement of the Work Conducted by the Department of Agriculture at Doncaster (Victoria) from 1932 to 1939.

By S. Fish, M.Agr.Sc., Biologist, Victorian Dept. of Agriculture.

THE object of this work, which was commenced in 1932 at Doncaster, was to determine, with a view to its control why black spot (Venturia Pirina Aderhold) continued to develop on Pears during the Summer months. This development of black spot on Pears during the Summer period reduced considerably the yield of exportable Pears per acre. In some seasons, as much as 25 per cent. of the Pear crop has been rendered unfit for export because of the development of Summer spot. It is thus seen that this disease affects an article whose export is possible. This export has increased enormously over the past twelve years (from 2,500 packages in 1926-27, to 370,000 packages in 1937-38).

Early in the investigation it was found that the development of Summer spot was dependent on the presence of Spring spot, and that a spray schedule effective for Spring spot control was effective also for the Summer spot.

The field spraying work

On this project over the first period of three years showed that consistent control of Summer spot could be obtained by the application of two pre-blossom sprays of Bordeaux mixture 6:4:40, followed by a cover spray of Bordeaux mixture 3:3:50 three weeks after the fruit had formed. The pre-blossom period was investigated with regard to defining its limits for safe and effective spraying, and it was found that the maximum protection against black spot, consistent with freedom from spray injury, was obtained where the first pre-blossom Bordeaux spray was applied at the late green tip stage and where the second pre-blossom spray was applied at the green flower bud stage.

Again, of all the experimental sprays used at these two periods none were superior to Bordeaux 6:4:40.

With regard to the cover spray of Bordeaux 3:3:50, it was found that this strength of Bordeaux was approximately the limit at which black fungus spots could be sterilised in one cover application, and that where a number of experimental cover sprays other than Bordeaux mixture were used in single applications, it was proved that these were inferior in fungicidal efficiency to a single application of Bordeaux mixture 3:3:50 where applied at the same stage and under comparable conditions.

While the spray programme of the two pre-blossom Bordeaux mixture sprays 6:4:40 followed by Bordeaux mixture 3:3:50, three weeks after the fruit had formed, gave consistent control of black spot in years very favorable for the development of the disease on several export varieties under investigation, i.e., Packham's Triumph, Williams, Beurre Bosc and

Winter Nelis, this programme produced a russet condition on sensitive green Pear varieties such as Packham's Triumph. For the brown Pear varieties this schedule was quite satisfactory and likewise for the less sensitive green varieties such as Williams.

Up to this stage, export regulations permitted russeted Pears to be exported even as first-grade Pears, consequently, it was preferable to russet the fruit and take a reduction of one shilling per case overseas than allow the fruit to be rendered useless by black spot. Subsequently, the export regulations were amended in order to limit, at least in the fancy grades, the export of green Pears showing russet.

With a view to the refinement of the black spot spray programme so that russet would be eliminated on the sensitive green Pear varieties, the experiments were continued for a further four year period at Doncaster in 1935.

Over this period, some fourteen different experimental cover sprays have been substituted in the spray programme in place of the Bordeaux 3:3:50 which spray is the one in the schedule responsible for the russet. These experimental sprays were of the following types: copper, sulphur, in various forms, zinc, salicylanide and oils, and while some of these sprays did not russet, particularly the weak copper sulphate sprays, the weather conditions during the period of these later experiments were such that black spot disease did not develop in the unsprayed trees, consequently, the fungicidal efficiency of the sprays which did not russet could not be assessed.

Further work is necessary for the purpose of obtaining evidence that the spray materials promising from the point of view of the elimination of russet are also effective for black spot control under conditions very favorable to the development of this disease.

In addition it is desirable that further work should be conducted with several other promising fungicides—copper oxychloride and cuprous oxide—which were included in the tests for the first time during the past season.

:: :: ::

On January 26, representatives of the Southern Fruitgrowers' Association and the Victorian Fruit Marketing Association attended at the orchard of Mr. W. A. Thiele, Doncaster, to inspect the trees in the experimental plots. There were also in attendance Mr. S. Fish, M.Agr.Sc., Govt. Biologist, and Mr. R. Anderson, Assistant Plant Pathologist, of the Victorian Dept. of Agriculture.

Storage of Plums and Peaches

Report of Progress with Experiments

FOR SOME YEARS investigations concerning the cool storage of Plums and Peaches have been proceeding at the Government Cool Stores, Melbourne, by the Victorian Department of Agriculture and the Council for Scientific and Industrial Research. In the December issue of the "Victorian Journal of Agriculture," the officers engaged in this work (Messrs. G. B. Tindale, B.Agr.Sc., and F. E. Huelin, B.Sc., Ph.D.) bring the results of the experiments up to date.

The storage life at any particular temperature is regarded as the maximum time the fruit can be stored at that temperature, and still ripen normally when transferred to a suitable ripening temperature. When stored beyond that period at low temperatures it is found that various disorders develop within the fruit when removed to a suitable ripening temperature.

With Plums, slight over-storage results in a failure to develop full juice and flavor. With further over-storage they fail to develop any juice or flavor, but become dry and mealy, and later develop internal disorders.

With Peaches a very similar series of disorders develops when ripening is attempted with fruit which has been overstored at low temperatures. With slight over-storage the Peaches lack flavor and juice on ripening. With further over-storage they fail to develop any juice or flavor; they become dry or mealy.

In the past a storage temperature of 32 deg. F. has been recommended for both Plums and Peaches, but it appears that it might be possible to attain a longer total storage life by combining an initial storage period at 32 deg. followed by storage at the minimum ripening temperature.

During 1938 a series of experiments on these lines was carried out. Six varieties of European Plums, four varieties of Japanese Plums and five varieties of Peaches were stored at 32 deg., and at weekly intervals removals were made to 37, 40, 43, 46, 50 and 55 deg. F., in the case of Plums, and to 45, 50, 55, 60 and 65 deg. F. in the case of Peaches. The results are based on one season only, but they suggest a modification of present practice.

European Plums, as a class, offer much better prospects for export than do the Japanese varieties, the longer storage life of the European varieties being of great importance where the shipping and marketing period occupies about eight weeks.

Most of the varieties of Plums could only be kept at 32 deg. for about four weeks if they were to ripen normally at 45 deg. after removal. As a week's delay for cooling, packing, etc., is quite usual before shipping, and as most of the cargoes are not landed in England until five weeks after

shipping, it is possible that the present practice of keeping Plums at 32 deg. for the whole voyage may have to be modified, and it may be necessary to raise the temperature from 32 to 45 deg. not later than three weeks after shipping.

Special reference is made to the outstanding behaviour of the Cole's Golden Gage (syn. Lawford's Gage). This variety will stand ten weeks at 32 deg. and then ripen normally at 46 deg. London reports confirm this, as this fruit invariably arrives in excellent condition and is sold at the highest prices.

Other Varieties.

The following varieties of Plums are recommended for export: Cole's Golden Gage, Grand Duke, President, Golden Drop, R. Claude de Bavay, King Billy, Narrabeen, Shipper.

Peaches.

During the 1938 season five superior desert varieties of Peaches were stored at the combinations of temperatures already stated. The earlier maturing varieties Zerbe and Hooker did not have as long a storage life as the later maturing varieties, Smith, Catherine Anne and Late Crawford, and this is in agreement with earlier results.

The maximum time the Catherine Anne could be left at 32 deg. to permit of normal ripening at 50 deg. was 6½ weeks, but when the ripening temperature was raised to 65 deg. it was found that the maximum period this Peach could be left at 32 deg. to permit of normal ripening at 65 deg. was increased to eight weeks.

Zerbe and Hooker varieties had relatively short storage lives. At all combinations of temperatures, the storage life of Zerbe was six weeks approximately, while the storage life of the Hooker increased from five weeks at the 32-65 combination to six weeks at the 32-55 combination.

From the local storage point of view, there is nothing to be gained by attempting long storage of early maturing varieties, and hence it is only the late maturing varieties that should be considered in this regard.

Fungal Rotting.

As a result of experience of several seasons' pickings, there is ample evidence that where Brown Rot infection is severe in the orchard, sound Peaches picked from that orchard will most likely develop Brown Rot. Where an orchard is free of this trouble, there is little, if any, likelihood of Brown Rot developing. Apparently the Peaches are already inoculated, but the inoculation is not visible, or the Peaches are heavily dusted with the mould spores, which ultimately germinate and attack the fruit.

Conclusions.

Conclusions reached are that neither for local storage nor for export can

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(See Page 30)

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the picking of immature Plums and Peaches be recommended.

The storage life at 32 deg. is limited by disorders developing after removal to ripening temperatures while, at the minimum ripening temperature, it is limited by over-ripeness.

It has been found that mature Plums can be kept for a considerable period by storing initially at 32 deg. and then transferring to the minimum ripening temperature, which varies from 40 deg. to 46 deg., according to the variety. The storage life obtained by this means varied from eight weeks with the Satsuma Plum up to eighteen weeks with the Cole's Golden Gage.

If higher ripening temperatures were used, the maximum period at 32 deg. was increased, but the time to ripen was reduced, and the total storage life was very nearly the same. Similar results have been obtained with mature Peaches, the minimum ripening temperatures varying from 45 deg. to 55 deg. according to variety.

The control of fungal rotting of Peaches in storage (particularly that due to Brown Rot) is primarily attained by reducing infection in the orchard, and rotting has not been controlled satisfactorily in storage when the fruit was obtained from affected orchards.

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Dried Fruits News and Notes

S. AUST. DRIED FRUITS BOARD.

THE South Australian Dried Fruits Board completed its year with a meeting which lasted the whole of December 21, 1938, when a heavy agenda was dealt with.

A considerable portion of the time was devoted to dealing with applications for renewal of dealers' and packing-house registrations for the year ending 31/12/39, and each application was considered separately. The majority were approved and others were deferred.

In the matter of door classification and the appointment of a supervising grader, after conferring with Mr. Senior Supervisor Colbey, who was present by arrangement, it was agreed that a grader for the Renmark area be appointed for the 1939 packing season and to issue licences to door classifiers. The Secretary was directed to confer with Mr. Colbey with a view to making the necessary regulations, which would be in line with those in operation under the Victorian Act.

The Secretary reported that the Amending Act had been assented to and submitted copies. He also submitted copies of the new consolidated Victorian Dried Fruits Act.

The report of Inspector Connolly on his visit to Eyre Peninsula was received and action taken in regard to the registration of the four growers in that remote area who were drying Currants.

In respect to the registration of approved processing premises, the report of Inspector Noblet on his inspection of five premises in the metropolitan area was received, and

it was agreed to notify the owners that if they desired to continue processing Prunes subsequent to 1/2/39, their premises would require to be registered as a packing house. It would also be necessary for the premises to be registered as "appointed places" under the Commerce Act if the owners intended to engage in the export of Prunes.

The draft of the Board's circular to Prune growers embodying the notes on harvesting methods prepared by the Research Officer (Mr. H. K. Kemp, B.Ag.Sc.) was approved. The Chief Horticultural Instructor attended the Board by invitation and gave a brief resumé of the work being carried on by his officers in connection with improved cultural methods.

DRIED APRICOT PRICES.

World Shortage Causes Rise.

A STRONG MARKET overseas, caused by a world shortage of dried Apricots, has resulted in a slight rise in the prices fixed by the Australian Dried Fruits Association. The new prices show an increase of 1d. per lb. on the closing rates of last year, and a rise of 1d. above the opening rates for that season. The drying season has been a favorable one, and fruit of excellent quality is now available. Single box prices are as follows:—

Fancy: 5-crown, 1/4 a lb.; 4-crown, 1/3; 3-crown, 1/2; 2-crown, 1/1.

Choice: 1/3, 1/2, 1/1, 1/0½, and 1-crown 11d.

Standard: 4-crown 1/1½; 3-crown, 1/0½; 2-crown, 1/0½; 1-crown, 11d.

Slabs, 1/-; plain, 11d.

CALIFORNIAN CROP LARGER.

The Californian Crop Reporting Service states that on November 1 the Raisin Grape crop in California was expected to be 1,399,000 short tons, as against 1,407,000 short tons in 1937. This is an apparent decrease of 66,000 tons in the quantity available. However, in 1937 about 419,000 short tons of Raisin Grapes were not dried. In consequence, if a larger proportion of the crop is dried, the production of dried Grapes may show an increase this year. The most recent estimate received is for an output of 265,000 short tons, as against 247,000 tons in 1937. At present, more than 60 per cent. of the 1938 crop is controlled by the Sun Maid Association, the Prorate Pool and the Stabilisation Pool. The quantity available to commercial packers is therefore relatively small. In view of the high proportion of the crop subject to control, prices are expected to advance from their present low levels.

DRIED FRUIT STOCKS.

In a report on January of the Commonwealth Dried Fruits Export Control Board stated that the quantities of dried vine fruits afloat and unsold from the 1938 pack amounted to 15,040 tons, comprising 1,014 tons Currants, 305 tons Lexias, and 13,721 tons Sultanas. Renewed demand was anticipated for Sultanas. The quantities unsold of Currants and Lexias were small compared with the shipments for the year, which were 13,852 tons of Currants and 2,591 tons of Lexias.

DRIED FRUITS NOTES—Contd. on Page 32.

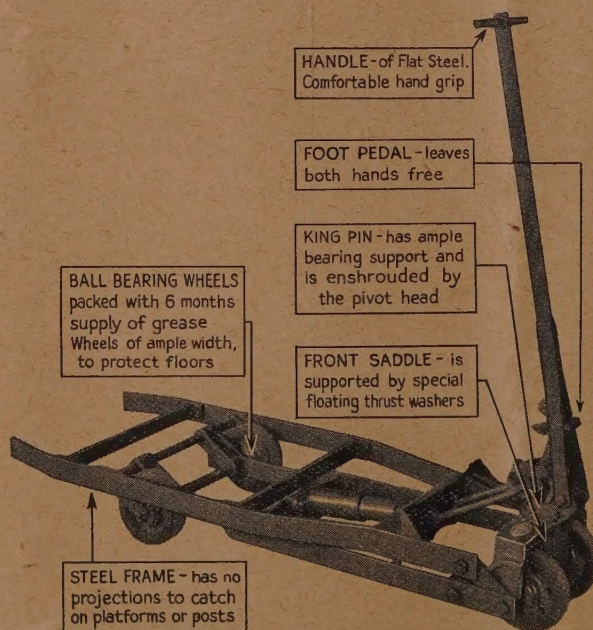
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Tasmania

BLACK SPOT APPEARS — DAMAGE BY GALES — RAIN NEEDED IN NORTH — RASPBERRY GROWERS AND EXPORT — LOSS THROUGH STRIKE — SCARCITY OF LABOR.

(From Our Correspondent.)

SEASONAL WORK in the orchards is in most cases well in hand, and the cultivation well done and trees looking healthy. Spraying for Moth, Canary Fly and Red Spider is in progress and so far these pests appear to be well under control.

Nicotine sprays are the chief means of combating the Canary Fly and are also effective against the Red Spider. Summer oils do not seem very popular in Tasmania, as several instances of serious injury to both fruit and foliage have resulted in various districts from their use. Another disadvantage, if used late in the season, is the difficulty of removing the spray residue.

Black Spot showed up in some orchards after the showery weather experienced in November and December, but not severely except in odd places and on susceptible varieties. The outstanding feature of the month has been the frequent severe gales of more than ordinary force, which have done considerable damage to the small fruit crops, especially Raspberries and are now bringing off a lot of Apples and Pears. The worst this season was on January 14, when it stripped a heavy percentage of Granny Smiths; in some places as much as half the crop was torn off, and trees torn and broken. Other varieties do not appear to have suffered as much as the Grannies, though Cleos, and Jons, were damaged a lot.

The Apricot crop has also suffered from the wind and dry weather, and much of it is very small.

Buyers are rather more active than usual at this time of year, and prices for all varieties have a firming tendency, so those growers who are fortunate enough to have good crops should do very well.

We read with regret of the widespread damage caused through drought and fire in Victoria and New South Wales. Tasmania has been comparatively fortunate, as gales have been our chief trouble.

Dry Conditions.

The conditions in the north of the State are not quite so favorable as in the southern districts, as rain is badly needed to maintain the growth of the fruit and the grass has gone off in the paddocks. In the south growth is still good, as the gales were accompanied by rain and Apples and Pears are well up to size for the time of year.

Raspberry Growers' Troubles.

The position of the Raspberry growers is not good, as the factories limited the quantities taken from each grower, and although the gales destroyed a lot, it appears that there will still be a lot allowed to waste. I understand the reason the factories cut down the amount taken from each grower was because the Sugar Concessions Committee only allowed \$4,000 for berry fruits for this season's crop, as against £8,000 last year, which, of course, cuts the exports down considerably, causing loss to the growers and also to all employees connected with the trade.

Last season approximately 1,000 tons of Raspberries were allowed to rot, and later it was found that the bulk of it could have been sold had it been processed, as there was a shortage overseas. It is an unsatisfactory state of affairs that allows the small-fruit industry to be dependent on the Sugar Concessions Committee for special grants to enable the processed

article to be exported at a remunerative price to the trade.

Overseas Market.

Mr. T. J. McKinley, who has been the State Fruit Board's representative in the United Kingdom for the past three seasons, has returned and is now giving a series of addresses in the fruitgrowing centres, dealing with the various matters of interest connected with the trade. He stresses the necessity of having a properly arranged shipping programme, not only with regard to suitable dates of loading, but also to ensure that cargoes are delivered evenly throughout the season and so avoid temporary gluts on the market.

Shipping Claim.

I understand that the claims against the "Stirlingshire" and "Tacoma Star" are still being proceeded with. It seems clear that as some holds in these ships carried their fruit well and others turned out badly, that the fault lay with the ship and not the fruit, as it would be impossible for growers to get all their faulty fruit into one or two holds, as they have no say in how the ship is loaded or what system of cooling is adopted.

Export Quota.

The quota fixed by the Apple and Pear Council should be sufficient to meet the altered crop conditions as apparently Tasmania and West Australia will be the only two States that will require their full share of the quota.

Crop Estimates.

I notice that the revised official estimate of Tasmania's exportable crop is 3,800,000 cases, being ten per cent. lower than earlier estimates owing to losses sustained through unfavorable weather conditions. The final figures based on actual shipments for the season, I should think, will be somewhat above the revised estimate, as so many young orchards are coming into bearing and many of the young trees are carrying heavy crops and a lot of reworked trees are coming back into bearing.

Hold-Up Causes Loss.

The holding up of the "S.S. Zealandia" for a trip owing to some trivial dispute with a union member was a most regrettable occurrence as besides inconveniencing a large number of tourists it caused a considerable loss of Green Peas, Apricots and other perishable produce destined for the Sydney market. The bulk of this loss falls back on the producer, of course, but in a season of scarcity like the present the consumer suffers as well.

Scarcity of Good Workers.

All orchardists are now busy getting ready for the approaching packing season. Graders are being overhauled and case material received, and sheds cleaned up. Arranging for the necessary skilled assistance for the harvesting is exercising our minds, as it is becoming a harder problem each year to get suitable help, as so many people are being attracted to the towns by the supposed delights of urban life. The distaste for country life and farm work seems to be growing steadily.

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Monthly Orchard Notes

THE Tasmanian Minister for Agriculture (Mr. R. Cosgrove) is in receipt of the following information from the Chief Horticulturist relative to the condition of the various fruits in the different districts throughout the State.

Weather and Crops.

The rainfall during December was above average, and greatly benefited all developing crops; this has, however, been followed by an unusually hot, dry spell, and though Apples and Pears are still growing well, a further subsoil rain would be of assistance, particularly to certain of the later varieties and those carrying heavy crops. Pears have been freely thinned everywhere and promise to be well developed and of good quality. Rainfall records obtained from the Weather Bureau for the main centres are as follows:—Hobart, 227 points, compared with the average of 209; Launceston 154, compared with 202, and Franklin 526, compared with 293.

Pests and Diseases.

Black Spot became more noticeable after the December rains in certain of the more susceptible districts, but the main areas are remarkably free from this fungus, and under normal conditions little trouble should be experienced. Canary Fly is much less prevalent in southern districts this year than in the previous two seasons, though orchards in the north of the Island are reported to be in some instances less fortunate. Both Codling Moth and Red Spider have been reported, but where a good general spray programme has been adopted these pests have been kept well under control. Up to the present time few seasons can be recalled in which crops promised to be of better quality; growers should, however, keep a watchful eye on their fruit and have the necessary spraying material on hand lest any belated outbreaks occur following altered weather conditions.

Stone Fruits.

Apricots have now reached a critical stage, for should muggy, wet weather set in during the harvesting

period considerable loss might be sustained from Brown Rot. Growers in the heavy soils, where water is available, have produced a very fine sample of fruit, and on well-worked black clays elsewhere the size and quality is all that could be desired. On the lighter, shallow soils, however, a large proportion of the heavy crops reported a few months ago will not reach a marketable size on account of the dry conditions. Late rains might still be of assistance, but would undoubtedly bring Brown Rot in their train.

Several growers have sprayed with weak solutions of colloidal sulphur as a preventive and the Department has several trials at present under way. Spraying trials done previously showed an unfavorable reaction by the trees to all forms of sulphur, so great care must be exercised in this respect. Picking cases have also been shown to constitute an important source of contamination as the season progresses. For this reason growers are advised to examine all such cases on arrival at their orchards and set aside for cleaning and sterilisation any which contain the remains of rotted fruit. As the fruit on the trees matures the liability to infection by Brown Rot increases; trees should therefore be picked over at frequent intervals and all over-ripe or diseased fruit removed and destroyed and not left on or under the trees.

Berry Fruits.

The picking season is now well advanced for the main berry fruits, and owing to the high temperatures experienced, ripening has been rapid. There has been some difficulty in obtaining suitable pickers, and some growers report losses through this shortage. Although the Raspberry crop is good, the long growing season last Autumn resulted in many unripened canes and a large increase in anthracnose disease. Where anthracnose is noticed, two Spring sprays of Bordeaux are recommended as a safeguard to next season's crop. Hobart, 14/1/39.

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Citrus News

CITRUS FRUIT IMPROVEMENT.

Cross-breeding Experiments in Progress.

CITRUS-GROWERS in all States will be interested in the following information supplied by the Director of Plant Breeding, Dept. of Agriculture, N.S.W.:

Citrus fruits have their original home in South-eastern Asia, and it is known that seed of at least some citrus species (Oranges, Lemons, Limes) was taken to America by Columbus in 1493.

Navel or seedless forms of Orange arose from seedy varieties as bud sports, but the well-known Washington Navel was not introduced by the United States Department of Agriculture from Brazil until 1870. The Valencia Orange was introduced into U.S.A. about the same time from England, having come originally from the Azores.

Inferior Types.

Rapidly displacing seedling groves, these two varieties now constitute the bulk of the commercial plantings of Oranges in Australia as well as in America. Many inferior types of so-called Washington Navel are being grown in Australia, and following the excellent lead given by Dr. Shamel, of the United States Department of Agriculture in the improvement of the commercial production of this Orange and of other citrus fruit by bud selection, a local organisation has laid the foundation for similar improvement at least in New South Wales.

Further Experiments.

Washington Navel and Valencia Oranges cannot, however, be regarded as wholly satisfying consumers' requirements for this fruit. Improvement is chiefly desirable in quality in a variety which comes in about the same time as Valencia, that Orange having somewhat "raggy" flesh. Bud sports have so far failed to produce any variety or strain of Valencia which is superior to the original variety in this respect, and although the raising of seedlings from open pollinated fruits of the variety and from crosses of it with other varieties does not offer a certain chance of success, some effort is being made along these lines. The varieties Whitby Seedling and White Siletta, which are early maturing Oranges of excellent quality, have been chiefly used as parents in crossing with Valencia in this objective. Crosses with the Washington Navel are also being undertaken in the hope of evolving a late maturing Navel.

Better Grapefruit.

The origin of the Grapefruit is obscure, but it appears to have been developed from a cross between the Shaddock and the Pomelo. It has increased enormously in popularity in recent years in America, and it is considered that there is a good future for it in Australia, especially with the advent of improved varieties. Because of its seedlessness, the Marsh variety, which originated in America in 1896, is most largely grown. Improvement on its thick rind and on its bitterness are, however, desirable, and it is being crossed with other varieties such as Wheeney, Poorman and Royal with this objective.

There is little doubt, however, that the Mandarin or loose-skin group offers also a very great scope for improvement in citrus fruits. The introduction of the Satsuma or Unshin Mandarin from Japan, and the Clementine variety from Algeria, varie-

ties of superior quality and of early maturity, marks one progressive phase of the improvement of this group in New South Wales.

Further improvement in color of rind and in color and quality of flesh, and in the "bouquet" is possible in citrus fruits, and the Mandarin group offers good possibilities for its use as a parent in crossbreeding to supply these characters to new varieties.

Improving the Lemon.

Even in Lemons some further improvement is possible, and has been effected in America by the crossing of the Genoa Lemon and the Mexican Lime to produce a new variety—the Perrine Lemon. It is described as a rapid growing, vigorous and productive tree which, by reason of its high resistance to scab and to anthracnose, has given a fresh impetus to Lemon culture in Florida. This new Lemon has now been introduced by officers of the Fruit Branch for trial in New South Wales.

New Fruits Produced.

Other crossbreeding between different species of citrus has been carried out by the United States Department of Agriculture, and the most promising new fruits have been obtained from the crossing of the Grape Fruit and the Mandarin, high quality fruits known as Tangelo Oranges having been produced from this cross. Some of these varieties which have high resistance to scab have also been introduced for local trial.

In addition to the well-known citrus fruits and to these new types of Oranges, other species of citrus which are native to the Philippine Islands, China, etc., have also been or are being introduced for observation and for possible use in a crossbreeding programme. The chief of these species are the Calamondin (citrus mitis), Kalpi (C. hystrix), Ponkan or Swatow (C. poonensis), Chao Chou (C. Tankan).

A Slow Process.

Improvement of citrus through crossbreeding is only capable of slow progress on account of the late age at which the seedlings come into bearing, and it is further complicated by the phenomenon of polyembryony, i.e., the production of several embryos in a single seed. In the case of a crossbred, all embryos but one are merely identical with the mother parent, and they must all be grown as seedlings until they are distinguishable from the crossbred seedling.

Seedlings from the first crossbreds obtained from the breeding project in 1931, and subsequent years up to 1935, have now been budded on to stocks and will be ready for planting out in a seedling orchard area at Grafton Experiment Farm in Autumn 1939.

CITRUS PESTS IN N.Z.

Helpful hints were recently compiled by Mr. W. Cottier, Entomologist, N.Z., Dept. of Agriculture, regarding Black Aphis and Mealy Bugs on citrus. After describing their life history and habits, Mr. Cottier advises that for Mealy Bug control the most effective method is to use a spray of Summer white oil 1 part to 80 of water, plus nicotine sulphate 1 part to 800 parts of spray.

A good wetting and penetrating agent is very desirable in sprays against Mealy Bug, and often a good

(Continued on Next Page)

W.A. Fruit Crop Prospects

RECORDS FOR APPLES AND PEARS — PEACHES AND PLUMS HEAVY — SULTANAS LIGHT — OTHER VINE FRUITS HEAVY.

IN HIS REPORT to the Under-Secretary of Agriculture, the Superintendent of Horticulture in Western Australia, Mr. G. W. Wickens, submits his forecast of the 1938-39 fruit crops, and also explains why he anticipates heavier crops of Apples and Pears. The report states:—

Early Practice.

In the early days of the Apple industry in Western Australia, when export to overseas markets accounted for only a minor portion of the Apples produced in the State, it was customary for growers to send their fruit on consignment to London, and the question was never raised of the

possibility of supplies being greater than the capacity of the market to absorb. But in the last 20 years, with increasing production and restricted markets throughout the world, a complete change has taken place in the system of sales; now, long before the Apple export season commences, merchants are in touch with overseas buyers endeavouring to make forward contracts, and the measure of success met with determines the quantity to be shipped and the prices to be paid, while Apples that go forward on consignment at growers' risk are now limited practically to a few thousand cases of unpopular sizes of popular varieties, and, additionally, a few

control can be secured by a thorough application of nicotine sulphate 1 part to 600 or 800 parts of water containing a good wetting and penetrating agent.

Our Murrumbidgee Irrigation Areas correspondent raises questions as to the non-setting of varieties, and in this issue the subject is further discussed by the Tasmanian Government Horticulturist (Mr. P. H. Thomas) under the heading "Factors Affecting the Setting of Fruits."

N.Z. EMBARGO ON CITRUS.

Potato Ban Blamed.

AT a conference of citrus growers in Gosford, strong criticism of the Federal Government was made for its attitude toward the New Zealand embargo on citrus. It was asserted that the prohibition on the importation of Potatoes from N.Z. was responsible for the continuation of the ban.

Mr. Ronald B. Walker, U.A.P. member for Hawkesbury, stated that he believed that as a result of his own representations while on a visit to New Zealand, the restrictions on imports of N.S.W. coastal fruits would be eased next year. He said that the Prime Minister, Mr. Savage, had assured him that if the Commonwealth Government had met him in any reasonable way over the Potato embargo, the citrus restriction would have been removed.

Mr. S. L. Gardner, M.H.R., Government Whip, said that he and the Federal Government realised that they could not please the citrus growers, wheat growers, or anyone else all the time. A Government had to be mindful not only of the primary producer but of the whole Commonwealth. There was a majority in the

Cabinet against the admittance of N.Z. Potatoes, and in Parliament the numbers were 20 to 1.

Cr. A. E. Lippcrapp, a member of the board of the Fruitgrowers' Federation, said they must remember that Tasmania was part of Australia, and the Commonwealth Government was only doing its duty in fostering an Australian industry in relation to Potatoes. He claimed that since the embargo the Potato position had greatly improved.

Prime Minister's Statement.

Mr. Savage, Prime Minister of New Zealand, referring to the protest by Gosford growers against the continuation of the embargo, said: "We are still prepared to discuss the Potato-citrus position between Australia and N.Z., which I have stated before is pretty close to stupid, with a view of having the whole thing straightened out. The Labor Government is ready now, as it always has been, to meet the Australian Government half-way in any trade arrangement."

Minister for Customs Replies.

Replying to the assertions made at the Gosford conference, the Minister for Trade and Customs said that there were two reasons why the Commonwealth was opposed to the importation of Potatoes from New Zealand. One was because precautions must be taken against the introduction of diseases, and the other was that Australian growers produced all the Potatoes required for the Australian market. The Minister added that Australia did not need to import Potatoes any more than she needed to import wheat or dried or canned fruit, and Australian Potato growers were entitled to the home market, which they could supply. He denied that there had been any friction between the two Governments on the question of the Potato embargo.

thousand cases of unpopular varieties.

The Present System.

The merchants who ship the fruit buy it from the growers at f.o.r. prices, and this practice has become so firmly established that I have frequently heard leading growers say that if they had to send fruit overseas on consignment they would not ship. Unfortunately, in the last few years it has been clearly demonstrated that the market in the United Kingdom can be glutted by over supplies, and in an endeavour to regulate these a quota system was inaugurated which limits the number of cases that each State in Australia can forward to that market. With each State battling for what it considers its just dues it is essential that a reliable forecast of the Apple crop in each of the various States should be made in December before the shipping programme is finalised, and when a crop can vary in quantity from one season to another by over half a million cases it can be understood the job presents some difficulty; and, also, in the season that a big increase occurs, the estimate might be looked upon with some doubt by representatives in other States, and this somewhat lengthy preface brings me to the subject matter of this report: "My estimate of the Apple and Pear crops in Western Australia for season 1938-39." Both are much heavier than last year, and each, in my opinion, will create a record for the State. I know there will be some divergent opinions as to the accuracy of my estimate of the Apple crop; some will claim I am well under, and others considerably over the hidden number, so I purpose showing how I have arrived at 1,500,000 cases as the nearly correct quantity.

Personal Inspections.

In accordance with my usual practice each season, I have during November and December visited some Apple orchards in all the principal Apple growing districts of the State, and made comparisons of this year's crop with that of last year's comparatively light crop, and with those of previous years, when crops were heavy, and I have also had reports from each of the Horticultural Supervisors in the various districts.

The Apple growing districts in Western Australia may be roughly divided into four zones—No. 1 the largest, taking in the South West from Harvey and Bunbury, south to Pemberton and Margaret River; No. 2 the lower Great Southern from Cranbrook south to Albany, and including Denmark; No. 3 the Darling Range from Perth to Harvey in the South West, also to Karragullen, Mundaring, Parkerville and Clackline; No. 4 from York to Pootenup and Taking in Williams, West Arthur, Marradong and Kojonup.

Last season 1937-38 the Apple crop for the whole State yielded 930,678 cases; 63 per cent. of this was harvested in No. 1 Zone, and consequently the crop this season does not show the big increase in that area over last year that it does in the others, particularly No. 2 Zone.

"Jonathans," "Granny Smith," "Yates," "Rokewood," "Doherty," "Delicious" and "Statesman" are heavy in all zones; "Cleopatras" are good in all, but definitely heavier in No. 2 Zone than in the others; "Dunns," both in No. 1 and No. 3 Zones are patchy, ranging from light in some orchards to very heavy in others, but in No. 2 the crop is definitely a heavy one, and up to the present in all zones only slight russet and crack are showing. An outstanding feature this season in all zones is the heavy crops that are being carried by varieties of trees not largely planted, such as "Nickajack," "Rome Beauty," "Gravenstein," "Lord Nelson," "Democrat," "Spitzenberg," "Williams" and others.

I estimate this season, 1938-39, the various zones will produce Apple crops proportionately heavier than last season, 1937-38, as follows:—

No. 1 Zone, 45 per cent. more; No. 2 Zone, 105 per cent. more; No. 3 Zone, 50 per cent. more; No. 4 Zone, 50 per cent. more.

This will yield:—		1938-39.	
Area in Bearing.		Area in Bearing.	Estimated Production.
Zone.	Acres.	Cases.	Cases.
1	5,306	593,850+45%	861,082
2	3,158	256,531+105%	525,888
3	878	70,055+50%	105,082
4	376	10,242+50%	15,363
Total	9,718	930,678	1,507,415

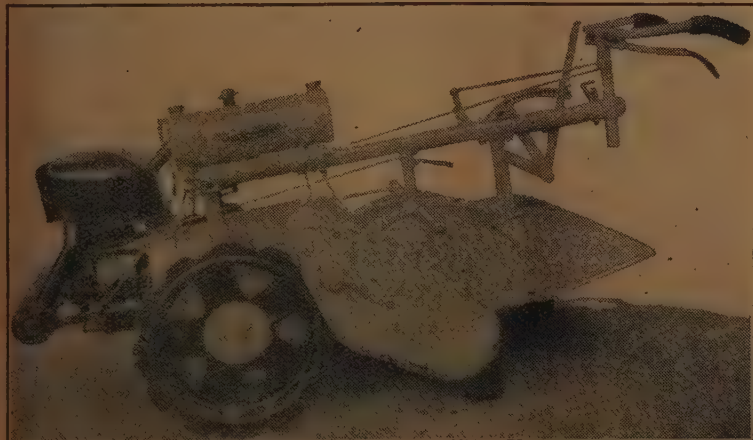
It is estimated that the bearing area in 1938-39 will have increased from 9,718 acres to 10,000 acres.

On making a comparison with our record crop to date, which occurred in season 1935-36, we have the following:—

1935-36.		1938-39 Estimated.	
Area in Bearing.		Area in Bearing.	
Acres.	Cases.	Acres.	Cases.
9,027	1,235,448	10,000	1,235,448 + 22% = 1,507,246

As stated above, the Pear crop is also heavier than it has been in any previous season; the export varieties "Winter Nelis," "Josephine," "Bosc" and "Packham" are good to heavy, "Comice" medium and the favorite local market Pear, "Bartlett" good to heavy.

Last season the Pear crop amount-



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S.A. DISTRIBUTORS: Power Plant Ltd., 100 Currie St., Adelaide.

THE HOWARD ROTARY HOE

Another Satisfied Owner

Brightside, Kentucky, 17/9/1938.

The Manager, Rotary Hoe Limited, Northmead, N.S.W.

Dear Sir,
You will be interested to know that I ploughed up a piece of land with the single furrow plough a few days ago, to see if the Rotary Hoe caused hard pan as predicted by "The Wise Heads."

As I used nothing else on this piece of land, only the Rotary Hoe for the past 3 years, and instead of finding hard pan, I found what I was sure I would find, "A beautiful soft spongy bottom, and a white piece of spewy land, turned into a nice dark chocolate."

I am more positive than ever now that I did the right thing in buying my hoe, and that for all classes of land tillage, the Rotary Hoe will never be excelled.

I might point out that the picture of my orchard in the "Government Gazette," is my young orchard only 7 years old, and had no tillage with any implement, only the Rotary Hoe, during the past 3 years, and the growth speaks for the wonderful work the hoe is doing. I remain, your more than satisfied client.

(Sgd.) MILTON JAMIESON.

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ed to 93,922 cases and I estimate an increase of 40 per cent. for season 1938-39 or 181,490 cases.

Stone Fruits and Vine Crops.

In connection with crops of fruits for season 1938-39 (other than Apples and Pears reported upon previously) I have to advise that the stone fruit crop is heavier than last season, the principal increase being in Peaches and Plums, while Apricots will show a small decrease.

Grape production maintains its character of being one of the most consistent fruit crops in the State, the exception to this general rule being Sultanias which, mainly owing to damage from Anthracnose, will be lighter than last year. Table Grapes, both export and local market varieties, have set good to heavy crops. Currants and Lexias are good to heavy, as also are wine Grapes.

It is somewhat early in the season yet to forecast the citrus crop, but from present appearances it should be heavier than last season.

Production of the above named fruits in season 1937-38 and my estimate for 1938-39 are as follow:—

	Production Cases.
Peaches.	
1937-38	62,261
1938-39 (estimated)	70,000
Nectarines.	
1937-38	15,869
1938-39 (estimated)	18,000
Apricots.	
1937-38	61,388
1938-39 (estimated)	58,000
Plums.	
1937-38	71,975
1938-39 (estimated)	85,000
Oranges.	
1937-38	304,852
1938-39 (estimated)	325,000
Mandarins.	
1937-38	14,429
1938-39 (estimated)	15,000
Lemons.	
1937-38	63,904
1938-39 (estimated)	64,000
Grapes (all varieties).	
1937-38	301,877 cwts.
1938-39 (estimated)—app. the same as above.	

Later: Hailstorms and floods have reduced the original estimate.

Too Much Cultivation Does Not Pay

TRADITIONAL BELIEFS SHATTERED

EXPERIMENTS were carried out over a period of 12 years at Rothamsted Experimental Station, in Great Britain, to see to what extent different ways and frequencies of cultivation affected soil yields, and whether the labor and cost was justified by the returns.

Mulch Fallacy.

A view once commonly held was that cultivation, such as harrowing, served to retain the moisture in the soil by breaking up the pore spaces in the soil and so inhibiting the capillary action by which moisture was supposed to escape. Contrariwise, rolling was supposed to serve the purpose of increasing the capillary pull and so bring moisture to the young plant below.

This theory regarding the capillary action of the soil and the effect of mulching in staying the action can no longer be accepted. Water does not move from its static position in the

soil; it is either absorbed by the roots that go in search of it, or else it evaporises and escapes in the form of vapor.

Conclusions.

The general result of these experiments goes to show that beyond the minimum of ploughing or cultivation required to prepare the seedbed and to keep it free of weed growth while the crop is growing, any extra cultivation carried out with the idea that loosening the soil will in some way promote growth or conserve moisture is simply waste of time and expense. The conclusions arrived at are stated as follow:—

Under the soil and climatic conditions at Rothamsted little or no advantage is gained from cultivations above the minimum needed to obtain a reasonable seedbed and to check weeds during the early stages of crop growth. Deep cultivations such as sub-soiling produce no increase of yield; intensive inter-row cultivation of root crops significantly depress the yield. Ploughing can be replaced by the quicker and cheaper operation of cultivating or grubbing whenever time presses without appreciable detriment to the yield.

These results agree closely with work done elsewhere in different soil and climatic conditions, and support the conclusion that cultivation has had little influence on crop yields.

It is quite certain that at the present time most farmers will deny this conclusion, but the facts remain. The experiments have extended over a 12 years' period; the cultivations were all normal operations, done by skilled farm workers and controlled by a skilled farmer; they cannot be dismissed as unpractical experiments bearing no relation to farm conditions.

The very important question arises as to how far these results are representative for other soils. There is a probability, but no certainty, that they are typical for medium and heavy lands where the annual rainfall is less than about 35 in. It is therefore highly desirable that cultivation experiments should be made on as many different soil types as possible.

ARBITRATION COURT AWARD.

Food Preservers' Union Claim Granted.

An application was made to the Arbitration Court on January 16 by the Food Preservers' Union of Aust. for an order binding all employers to pay employees, whether members of the Union or not, the rates and conditions of the Federal award. It was stated that this was the first application of its kind in the Commonwealth, the Union having created an interstate dispute on this issue alone.

Judge Piper granted an adjournment for a discussion by the parties. After half an hour it was announced that an agreement had been reached. This was submitted to His Honor, who granted an order binding all respondents to observe the conditions of the award, whether employees were members of the Union or not.

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N.S.W. NEWS & NOTES

Murrumbidgee Irrigation Areas

UNPRECEDENTED HEAT WAVE — PRUNES BADLY AFFECTED — BIG SCHEME FOR PERMANENT WATER SUPPLY — CROP PROSPECTS — FIGHTING RED SCALE.

(By Our Correspondent.)

THE PROLONGED HEAT WAVE which has done such appalling havoc throughout Victoria and N.S.W. has undoubtedly taken a heavy toll of life on the Irrigation Areas, and 30 deaths have occurred in Griffith directly attributed to the effect of the inclement weather.

The extremely old and the very young people were in the majority of cases the victims, but others also succumbed to the severe heat, which has never been exceeded in the memory of the oldest resident on the Areas.

The lives of some very young children were saved by placing them in the cool rooms at the Griffith Producers' Shed, and the gratitude of the parents has been expressed to the management for their consideration and thoughtfulness in offering the accommodation.

The effect of the continued heat has been very detrimental to the Prune crop, and large quantities of badly scorched fruit has fallen in a premature condition which will prevent any use being made of it. The crop is still a long way from maturity and the sugar content of the Prunes has not yet formed in sufficient quantities to preserve the fruit which has shrivelled after falling. This is not to be wondered at when the shade temperature officially taken under the most favorable circumstances has reached the height of 116 deg. F. and records have been reported of temperatures ranging as high as 122 degs. on shady verandahs around the district.

As there is a very high margin of difference between the shade and direct sun heat, it is not to be wondered at that fruit has been scorched, but the great wonder is that not more severe damage was done than has actually occurred.

The Apricot crop was harvested with little or no loss, and the bulk of the fruit was absorbed by the various canneries and very little of the crop was dried, although ideal conditions for processing it prevailed during the season, and it was after the finish of this crop that most of the extreme heat was experienced.

Elberta Peaches and Angelina Plums suffered very little damage, and growers of these fruits have realised prices on the Sydney fresh fruit market that have not been received for this class of fruit for many years. Probably the weather conditions which occurred some weeks ago

accounted for the shortage, and with the hot weather in districts which rely entirely on a rainfall the fruit has not matured, and this circumstance has left the markets light of supplies. The Area growers are certainly situated under far more favorable conditions than are most parts of the State, and they are fully aware of their good fortune.

So far no horticultural properties have been short of the life-giving irrigation water, although it has been reported that some of the Rice growers have already absorbed their full measure and have in consequence to go short in supply, but in spite of the universal fear that a shortage might occur which would prove disastrous, it has so far not been realised by the horticultural farms at least, and with the prospects of heavy rain coming across the Continent the hopes that heavy rains may fall in the catchment area of the Burrinjuck Dam is a reasonable expectation.

Scheme for Permanent Water Supply.

On Saturday last (14th inst.) a most important conference was held at Griffith and was largely attended by representatives from all parts of the South Western areas.

In a powerful speech, the Minister of Agriculture (Major Reid, M.C.), who is also Chairman of the Water Conservation and Irrigation Commission, expressed the realisation of his colleagues and himself of the urgency for the increase in supply for the Burrinjuck Dam, and expressed himself in favor of the Lake Meejum scheme for additional supplies of water.

Mr. Harnett, a surveyor and engineer of high repute, outlined the Snowy River Scheme, and by means of a large map illustrated how this scheme was most eminently suitable for augmenting the Burrinjuck supply by diverting the waters of the Snowy River through sundry creeks, or by means of a tunnel through the mountain one mile in length, Mr. Harnett maintained that a continuous supply of water, which would otherwise merely run to waste into the sea, could be diverted to prevent for all time any shortage in the supply, and moreover would, with the additional improvements which are contemplated in the capacity of the Burrinjuck storage, provide sufficient water to enable an increase in areas surrounding the present irrigation districts.

Mr. Harnett moved the following resolution, after his very able discourse on the scheme:—

"That this conference suggests to the New South Wales Government for investigation, the provision of increased storage for immediate supply by tapping the Snowy River water from the junction of the Eucumbene and Snowy Rivers, and that this conference agrees to co-operate with the Irrigation Commission in all measures to be taken by them for increased storage."

The motion was carried unanimously, and with loud applause.

Mr. Harnett stated that although this proposition had been previously mooted, as stated by Major Reid in his address, yet that was in 1887, and although at that time the proposition was considered to be too costly, yet now, with greater facilities of finance available, the scheme might not now present the same difficulties as formerly, and it should receive careful consideration.

Mr. R. T. McKay, Chairman of the N.S.W. branch of the Institution of Civil Engineers, who was closely associated with the original scheme for the building of the Burrinjuck Dam, stated that he was intimately acquainted with the Snowy River district and the possibilities of the surrounding country, and he was most impressed by Mr. Harnett's proposals. Repairs to the existing wall of the dam were proceeding, and the New South Wales Government proposes to spend the huge sum of £1,850,000 in strengthening and increasing the capacity of the Burrinjuck Dam over a period of years.

Mr. J. C. Lloyd, Mayor of Balranald, who travelled over 200 miles to attend the conference, moved the following resolution:—

"That the Murray River Agreement be amended to permit of the construction of fixed weirs between Hay and the junction of the Murrumbidgee and Murray Rivers." This was seconded by Mr. R. H. T. Matthews, President of the Waradgery Shire Council, Hay, and also carried.

In all, five resolutions were passed, all dealing with the urgency of increasing the supply of available water, and making immediate provision for increasing the storage capacity of Burrinjuck Dam.

The movers of the other resolutions were Messrs. C. Shaw (Chairman, Benerambah Settlers' Association, Cr. J. Reilly (Wade Shire), and J. H. Kelly, Secretary, Large Areas Holders' Association.

The attendance of so many influential delegates from all parts of the State showed how important the scheme for reconstruction of supplies of irrigation was, so that if future droughts occurred, the settlers would never again be faced with the same situation as they were placed in today, and Mr. J. H. Kelly, in a very forceful speech, urged that every assistance be accorded to the Irrigation Commission in the efforts they were



18-year-old Valencia tree at the orchard of G. W. and F. G. Beverley, Griffith, N.S.W. Mr. G. W. Beverley and his grand-daughter are also shown.

undertaking to master the position and protect the interests of the irrigation settlers whether large area farmers or horticulturists.

Fruit Prospects.

Apples: Granny Smith Apples, very light.

Jonathans and Cleopatras heavier, but a considerable amount of sunscald has occurred in these varieties.

Pears: Good to heavy crops, with some scorching of foliage, and fruit, but generally not so severe as in Apples.

Peaches: Good to heavy crops, but fruit not sizing up too well at present.

Navels: Generally light, and a decided scorching of one side of the trees where at all exposed or unthrifty.

A heavy drop has occurred among Mandarins and Lemons, which have proved more susceptible to the hot winds than Valentias, which have apparently stood up to the weather conditions the best of all.

Fighting Red Scale.

The only beneficial factor which has been noted is a severe mortality among Red Scale on the citrus. The prolonged period of hot weather has undoubtedly killed a very large proportion of this serious pest, but growers must not be lulled into a false sense of security in this matter.

The Entomologist (Mr. Wason) urges a very close inspection of all citrus groves and where Scale still survives, fumigation should still be practised, so as to give a knockout blow to this serious pest. The weather, owing to lack of humidity, has not been favorable for the work, and windy nights have also delayed the various gangs in their operations, but every opportunity is being taken to make a good clean-up, and the Department of Agriculture's officers are accompanying the various gangs at night with the idea of noting the methods adopted, and endeavouring to ascertain where any improvements in application may be instituted to ensure a better kill than has occurred on some farms in past seasons.

On some farms in the past, with the general methods prevailing, a good kill has resulted, while on others quite the opposite has been observed, and it is with this object in view that the Fruit Branch officers are noting the various phases of climatic and other conditions prevailing at the time of fumigation.



Grove of 9-year-old Grapefruit, variety Marsh's Seedless.

APRICOT BREEDING

Results of Work in 1937-38

THE Director of Plant Breeding in New South Wales, Mr. Wenzholz, states that the principal objective of the Apricot breeding project is the production of later maturing varieties than the standard, Trevatt, in an endeavour to bridge the present gap between the last Trevatts and the earliest canning Peaches. Breeding work is also in progress to produce earlier canning Peaches, with the same purpose.

Trevatt itself is generally deemed satisfactory as a canning variety, and would be difficult to displace. In curious distinction to its performance in other canning centres, such as California, where Royal is preferred, Trevatt is unexcelled locally in quality, yield and evenness of ripening.

Extensive crossing by Mr. Poggenдорff of the Apricot varieties available has resulted in the production of several hundreds of seedlings, many of which have now reached the

fruiting stage at the Rice Research Station. A critical examination of these seedlings made by Mr. Poggenдорff and Mr. Horth, Fruit Instructor, reveals the fact that in general, the results of a survey of their performance have, however, proved disappointing, as regards the objective in view. Practically all the seedlings which have shown any promise in quality size and yield are earlier, or no later, than Trevatt. The progeny of several late seedlings which were located and used in crossing for this character, have failed in other respects.

Extreme lateness, combined preferably with some pretension to quality, appears to be essential in a parent variety for the purpose in view, to counteract the tendency apparent in all the varieties used so far, including Trevatt, of giving preponderantly early progeny. A very late variety now growing at the Station, Skuse's Late, and used for the first time during the past season,

may provide a solution of the difficulty.

Among the more promising cross-breeds obtained to date, Moorpark x Bouche Pêche Y.S. 35-6, is expected to fruit in the orchard this season; it was slightly earlier than Trevatt in the trial plots.

Two other seedlings, Trevatt x Tilton, and Trevatt x Moorpark, were worked for orchard trial during the past season, following satisfactory canning trials.

Introduction of seed from centres where the Apricot grows wild, in the hope of obtaining a range of useful characters, have also been disappointing. The numerous progeny of seed from Morocco, Palestine and southern Asiatic Russian States though showing considerable variation, in general lack quality and size, and are usually very early. Only one (Klabi) is very late, and has been used in crossing.

Flink: Quite a stir was caused by an old maid in the seed store yesterday.

Wink: How come?

Flink: She walked in and asked how to sow wild oats.

Deciduous Fruit Trees

When and How to Train Them.

ALTHOUGH NO PERIOD can be set down for the training of deciduous trees because young trees in which the framework is being developed require looking over periodically during the growing stage, particular attention is required in late Summer. About this time, some leaders often rush ahead of their neighbours, and they should be pinched back to keep an even growth in all leaders. The pinching back should be confined to the tender top of the leader, for if the shoots are topped into the wood that is hardening they may be permanently stunted.

Watch Buds and Grafts.

The shortening back of the current year's laterals of the Rome Beauty Apple, or other varieties of similar habit, in order to hasten fruit spur formation, can be carried out early in February. The idea is to strike a time, as nearly as possible, which will only allow a short second growth to form after cutting, before growth ceases in the Autumn.

A watch should still be kept on all buds or grafts that started into growth last Spring in order to check back hard any strong growths from the stock, to prevent robbing. In some cases it is better to cut such strong growths from the stock right out.

Small or light growths from the stocks should be left, as they provide shade. Moreover, these shoots assist in the circulation of the sap, and the foliage assists in the elaboration of the raw sap which then feeds all parts of the tree. Of course, in trees that are multiside grafted, these small shoots are ultimately removed.

Ties should also be provided where necessary to prevent shoots from buds and grafts being damaged by wind. When the growth is very rapid, it is sometimes necessary to pinch them back to prevent them from being blown out. Here again care should be taken only to pinch back the tender top.

A GOOD WHITEWASH.

Obtain, if possible, large pieces of fresh lump lime, place them in a very large bucket or other container, and into this pour hot water. Cold water will do, but hot water is better, as it hastens the slaking. The lime will start to boil and break up. Keep it covered all the time with about half an inch of water. This is important, for if whilst the lime is slaking it is allowed to rise up above the water in a dry powder it will "curdle." Before the lime commences to boil fiercely, add tallow or common fat in the proportion of about 1 lb. to 14 lb. of lump lime. This makes a good binder which will prevent the wash from rubbing off. If desired, a little yellow ochre may also be added, which will give a cream or buff tint according to the quantity used. When the lime is thoroughly slaked it should be stirred and sufficient water added to make it a little heavier than, say, milk, after which it should be strained, and, if desired, may be applied whilst hot.

ACKNOWLEDGMENT.

Much useful information is given regularly in the "N.S.W. Agricultural Gazette." From the January issue we have republished notes relative to Woodiness in Passion Fruit, Handling Mangoes, Packing Pineapples, Diseases of Bananas, and Anthracnose of Cucurbits.

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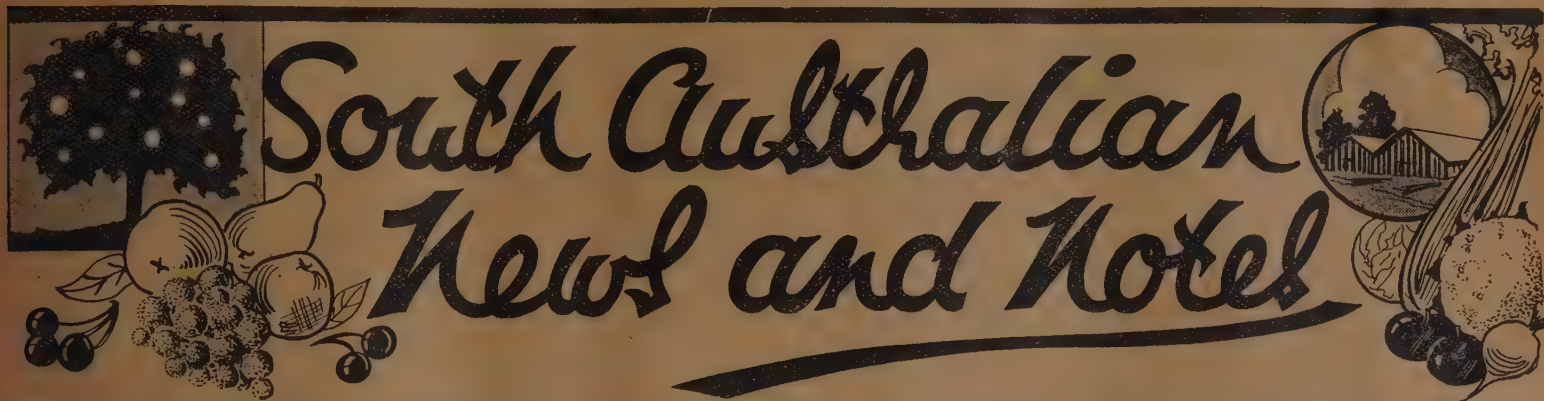
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The South Australian Fruitgrowers' & Market Gardeners' Association Incorp.

EXECUTIVE COMMITTEE

THE executive committee of the S.A. Fruitgrowers and Market Gardeners' Association Incorp., met in the Board Room on Friday, January 27, 1938, at 10.30 a.m.

The President (Mr. W. J. Bishop) presided over the meeting, which was attended by Messrs. C. Ridley, H. W. Parsons, A. J. Hollister, H. N. Wicks, H. H. Schultz, G. Clifton, J. B. Randell, C. J. Pitt, R. A. Cramond, G. H. Schultz, J. Turner, W. H. Ind, G. Jennings, H. B. Robson, L. J. Wicks, F. A. Wicks, M. J. Vickers, N. T. Hobbs, R. Hunter, A. Hersey, Jr., A. O. Petersen, A. G. Strickland, F. Hughes, and Secretary.

Apologies received from Messrs. G. T. Pitt, C. W. and E. L. Giles.

Minutes: A copy of which had been forwarded to all members, taken as read and confirmed.

Correspondence: Fruit Industry Sugar Concession Committee with reference to the time of fixation of canning prices for Pears. Received.

Fruit Industry Sugar Concession Committee enclosing minimum prices prescribed for the canning and jam manufacture of fresh fruits.

Received and resolved that prices be published in the S.A. Section of the "Fruit World" for the information of growers.

S.A. Fruit Marketing Association, inviting a representative from this Association to attend a meeting on January 27, 1939, when a list of names will be submitted to the Minister of Commerce for consideration in nominating a Shippers' Representative for S.A. on the Commonwealth Apple and Pear Board.

Mr. J. B. Randell moved, supported by Mr. G. H. Schultz: "That the chairman of the Apple and Pear Section represent the Association at the meeting. Carried.

The Dept. of Commerce in reply to our letter of December 8, 1938, concerning the proposed elimination during 1940, of certain varieties of Pears.

Resolved that this letter be handed on to the Apple and Pear Section.

City Inspector relative to the stamping of weights and measures.

Mr. G. Jennings moved "That efforts be made by the Association to have new scales and weights stamped prior to purchase by user." Seconded Mr. G. H. Schultz. Carried.

The Premier of S.A. (Hon. T. Playford) with reference to the new trans-Australian train schedule and subsequent agreement by the Commonwealth Railways. Carried.

Metropolitan County Board concerning the use of manure bags, and advising that the Board was considering our suggestion.

Mr. L. J. Wicks, a member of the deputation which met the Board, reported that since the interview with

the Board he had been requested to submit sample of bags which had undergone various systems of washing. Subsequent word was received concerning the analysis of the different bags, and it now seems hopeful that bags which have contained manures of inorganic nature can be used provided they are washed and after washing do not retain more than 50 grains.

Sectional Reports.

Mr. F. Hughes reported on the activities of the Soft Fruit Section, concerning markets, and the successful operation of the price ticket.

The advisability of placing a blackboard in each market, whereon prices fixed could be placed for the immediate information of growers, was discussed, and Mr. G. H. Schultz moved "That Mr. F. Hughes and the Secretary negotiate with the Market Companies for permission to erect blackboards in the markets." Seconded Mr. J. Turner. Carried.

Reports were also received from the Apple and Pear, Celery, Potato Sections and the Marion Branch.

Mr. A. G. Strickland was present, and replied to various questions asked by members. He stated that the Jassid Fly has been very considerably reduced in quantity by the heat wave, and this may mean a comparative freedom of the pest for some years.

Asked whether the heat had any effect on codling, he stated that the effect was negligible, and as another peak could be expected, growers would be well advised to keep a good cover on the fruit, and on no account miss a spray. He also stated that the Lemon crop in S.A. had been badly affected by the heat in most districts.

Mr. N. T. Hobbs reported that a factory on the Glen Osmond-road was interested in quantities of Lemons for Lemon oil production, and as skins were principally required for this, growers would be well advised to contact this firm.

As Mr. Strickland was sailing for England during February, the chairman wished him on behalf of the Association a good trip, and a profitable time.

Mr. Strickland, in thanking the chairman for his good wishes, realised that he was not going at the best time as far as S.A. export was concerned, but hoped to make the best possible use of the opportunity afforded him.

Organiser: The matter of an Organiser for the Association was discussed at length, and Mr. F. Hughes moved "That an Organiser be appointed by the Association for a period." Seconded Mr. L. J. Wicks. Carried.

Resolved that the Chairman, Secretary, and Messrs. L. J. Wicks, and

F. Hughes, form a Committee to appoint Organiser.

Water: The urgent need by growers, along the Torrens between Paradise and the Lake, of water, was stressed by Mr. N. T. Hobbs, and he moved "That the Water Committee endeavor to get a flush down the river if possible. Seconded A. J. Hollister. Carried.

Market Reports: Resolved that the Secretary make arrangements re the obtaining of prices for market reports.

Finance: The financial statement was submitted and adopted.

Celery Committee Prepares for 1939 Season

Mr. M. Packer Appointed Chairman

With the 1939 Celery season approaching, the Celery Section has begun preparations, and the Committee has been appointed.

The following will comprise the Committee: Messrs. G. J. Strange, M. and W. Packer, A. J. Hollister, N. T. Hobbs, V. W. C. Schulze, A. R. Martin, C. Ridley, W. Farnham and A. Floyd.

At a meeting of the Committee held recently, the business of electing a chairman was transacted, and Mr. M. Packer was appointed.

Mr. Packer succeeds Mr. G. J. Strange, who has held the Chairmanship for the past three years.

Mr. Packer, who is one of the foremost Celery growers in South Australia, has been growing Celery for the past sixteen years, and his knowledge of the industry makes him an ideal man for the position of chairman.

The Section has been controlling its own export for nine years, and during that period has reached a stage of organised efficiency.

Mr. Packer was chairman during the first three years of the present organisations' existence, and his untiring efforts and confidence in co-operation played no small part in making the Section the efficient body it is to-day.

In addition to those three years, he has been represented on every Committee of the Section since its inception.

Mr. Packer has on numerous occasions gone interstate as a delegate for the Section, and attended to the business of the industry at the receiving end.

Mr. Packers' thorough knowledge of growing, packing, freighting and marketing of Celery will stand him in good stead during his term of chairmanship, and will also be of valuable assistance to his fellow growers.

Members of the Committee paid tribute to Mr. G. J. Strange for the invaluable service rendered the industry during his term of office.

MINIMUM PRICES FOR FRESH FRUITS.

For the information of growers who are unaware of the minimum prices prescribed for fresh fruits during the 1938-39 processing season, the following have been supplied by the Fruit Industry Sugar Concession Committee.

These prices apply uniformly in all States.

(A) Fruits for Canning.

Variety.	Minimum Price per ton.
Clingstone Peaches—	
Clear centre	£9 10 0
Other	£8 10 0
Freestone Peaches	£7 0 0

Pears—

Bartletts	£10 0 0
Keiffers	£8 0 0

(B) Fruits for Jam Manufacture.

Variety: Peaches; minimum price per ton, at metropolitan factory, £6; at country factory, £5.

Delivery: The foregoing prices are on the basis of "Delivery at Factory."

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The South Australian Fruit Marketing Association Inc.

CONTROL BOARD DISCUSSED AND CONTINUATION OF S.A.F.M.A. AND APPLE AND PEAR COUNCIL DESIRED — PRIZES FOR EXPORT APPLES — BON VOYAGE TO MR. STRICKLAND.

THE MONTHLY MEETING of the executive of the S.A.F.M.A. was held at Adelaide, on January 27, 1939.

There were present Messrs. J. B. Randell (chairman), P. R. B. Searcy, C. A. Stewien, S. M. James, A. R. Willsmore, R. O. Knappstein, F. F. Redden, M. G. Basey, L. J. Bishop, A. Brealey, A. G. Strickland, D. Norsworthy, R. A. Cramond, G. Quinn, F. B. James, G. Mack, A. O. Petersen, H. N. Wicks, R. H. A. Lewis, M. J. Vickers, and E. W. Mills (Secretary).

Correspondence: Letters were received from the Dept. of Agric. re applications for export of W.B.C. Pears; from members of Parliament, W.A., and Victorian Fruit Association, re National Insurance; from

Dept. of Customs re alteration of By-law 1,101, re timber for use in cases; from Apple and Pear Council (forwarding cheque for delegates' expenses to conference), twelve advertising folders, report of judges in Handwriting Competition, copy of letter re trade with Netherland E. Indies; minutes of Empire Fruits Council meetings; letters also received re Pear varieties for export and new clause in Marine Insurance policies.

Continuation of S.A.F.M.A.

Letter also received from the Apple and Pear Council requesting expression of opinion re continuing the work of the Council and constituent Associations.

After discussion it was finally resolved:—

"That in the opinion of this Association it is essential that the S.A. Fruit Marketing Association should continue to carry on after the establishment of the Apple and Pear Board."

And the general opinion of members was also in favor of the continuance of the Apple and Pear Council as complementary to the Apple and Pear Organisation Board.

Members felt that the good work that had been done by the Apple and Pear Council in the past could be effectively continued in the future, and would be of great assistance to the Apple and Pear Organisation Board.

Suggested Prize for Export Apples: The Sub-committee consisting of Messrs. H. N. Wicks, M. G. Basey and A. O. Petersen, submitted their report on the suggested conditions for a prize to be provided by the Association for export Apples and Pears to take the place of the Orient Cup, which has been discontinued.

After the report had been submitted, a resolution was passed on the motion of Mr. F. B. James, seconded by Mr. R. O. Knappstein:

"That the Association donate a prize for export fruit."

The suggested conditions drafted by the Sub-committee were then considered clause by clause and subject to certain alterations were approved, and it was agreed that the copy of the amended conditions should be given to Mr. Wicks so that he could place the proposals before the Council of the Royal Agricultural Society.

Mr. A. O. Petersen stated that he was not in complete accord with the proposals.

Mr. A. G. Strickland: The President took the opportunity of wishing bon voyage to Mr. A. G. Strickland, who is leaving for London on February 23. He stated that he hoped that Mr. Strickland's visit to England would prove of great value, both to himself and to the Apple and Pear industry, and they looked forward to receiving very useful information from Mr. Strickland on his return.

Mr. Strickland thanked members for their good wishes.

Membership Applications: Mr. J. H. Dunning, Rundle-street, Adelaide; S. H. Colman, Mt. Crawford.

It was resolved that the applications be approved and that they should be entered in the Register of Members.

Late H. J. Bishop: The President expressed the thanks of members to

Mr. L. J. Bishop and his mother for their gift of a photograph of the late H. J. Bishop.

Mr. Randell made eulogistic reference to Mr. Bishop's services during his long term of office, and he asked Mr. L. J. Bishop to convey members' thanks to his mother.

As already agreed, Messrs. Randell and Wicks would make the necessary arrangements for having the photograph framed, with a suitable inscription, and it would then be hung in the Secretary's office.

Bush Fire Fund: On the motion of Mr. R. O. Knappstein, it was unanimously agreed that the Association donate 20 guineas to the Bush Fires Fund.

CHECKING SAND-DRIFT.

Remarkable Success at Broken Hill.

ABOUT TWO YEARS AGO the Zinc Corporation at Broken Hill agreed to give a trial to a scheme for checking sand-drift, prepared by Mr. A. Morris, an assayer in one of the mines. Mr. Morris, who had had botanical training, experimented on a small scale, and produced such results that a more extensive test was undertaken by the Zinc Corporation.

An area of 22 acres was fenced against stock and rabbits. It was planted with saltbush, seeds of trees and shrubs, and 1,600 young gums were set out.

Waterings were given, and astonishing growth was made. The saltbush quickly arrested drift wherever it was planted, and trees and shrubs of all kinds quickly formed a barrier. At the Morris Park, a barren, wind-swept and sand-strewn area, wind-breaks stopped the drift and grass grew on the area. Outside the shelter-belt, the drift went on as before.

So remarkable have been the results that the three main mining companies have combined to encircle the city with a barrier of tree plantations that will rid it of the sand menace, which has been creeping closer each year. The N.S.W. Government is assisting, and townspeople, seeing the value of the work, are applying the same methods to their homes and urging extensions of the work in all directions.

The originator of the scheme, Mr. Albert Morris, advocated it for fifteen years. He died recently, but lived long enough to see the triumph of an idea that was derided and discouraged for a long time.



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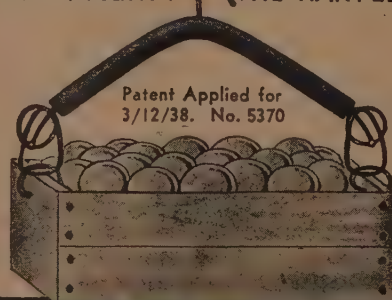
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SOUTH AUSTRALIA—(Continued).

Mid-Murray Notes

SMALL HEAT-DAMAGE TO VINE CROPS — EFFECTS OF IRRIGATION ON TEMPERATURE — DEVELOPMENT ARRESTED BY HEAT — PEAR CROPS HEAVY — PEAR TREES AFFECTED — TIMING THE SPRAYINGS FOR MOTHS.

(By Our Correspondent.)

Renmark, January 20.

THE FIRST FORTNIGHT in January of the year 1939 will long be remembered as black days in the history of this country, what with devastating bush fires, accompanied by an unprecedented heat wave, records of which have not been equalled since white men came to Australia. Although we are far distant from the scenes of the fires, our sympathy, to those who have lost their lives is deep-seated and sincere. The practical response by firefighters in their assistance to the less fortunate, followed by monetary assistance, is a thing which revives our confidence in the open-heartedness of mankind generally.

While travelling through the Barossa district on a blistering hot day recently I was quite surprised to see any fruit left on the trees, and leaves left on the vines. This district comprises a large area of vines, principally used for wine making, which depend on the natural rainfall to mature the fruit. A lesser area of Plums, Apricots, Pears, etc., is also grown. Little rain has fallen in this area since October, and the fact that the vines and trees were still green showed the deep rooting system developed by these trees and vines, compared with those in the irrigation areas. We have just completed our fourth irrigation, and a "special" is in progress for those who are early on the roster list. For those who are late on the roster and experienced a gruelling fortnight of temperatures over the 110 mark, sometimes going over to 118, the vines have suffered considerably. Individual losses in some cases are heavy, but taking the settlement as a whole there would not be a 5 per cent. loss through the heat wave.

Irrigation and Temperature.

The influence of irrigation on soil temperatures and air temperatures is somewhat astounding. On Friday, January 13, there came a "brickfielder," and the shade temperature went up to 118 deg., but immediately over a portion of irrigated land the temperature only registered 108 deg. The soil temperature in dry sand just below the surface registered 158 deg., but below the surface of a recently irrigated piece of land, the mercury could only be induced to go up to 104 deg. In the same way the night temperatures are influenced by air currents moving from irrigated to non-irrigated land. The most surprising fact about this fortnight, with an average temperature of 105 deg., is the small amount of fruit scorch evident, and I cannot dissociate this with the beneficial influence of many years of planting cover crops. This opinion has been amply borne out by comparisons of the loss sustained by those who do not follow regularly the practice of cover cropping. Regulation cover crops have the effect of lowering the soil temperature by virtue of incorporating a bulk of organic matter.

Arrested Development.

During the fortnight of heat, all fruit development appeared to be arrested, possibly due to the soil organisms ceasing to function, but with the return of temperatures between 90 and 100 development was again

rapid, and it now appears that the season for picking will be at the normal time, that is, early in February for Currants. Currants, however, are showing an irregularity in ripening which is rather disappointing in view of the fact that the "trade" has appealed to growers to take special care in producing a good quality Currant this year. Unless care is exercised in picking only the ripe fruit, the quality will undoubtedly suffer. At the time of writing (Jan. 20) some bunches show a Baumé of 13, while on the same vine can be found red and green bunches which have not yet commenced sugaring. Sultanas, on the other hand, are developing far more evenly and give promise of a high Baumé earlier than usual. The Currant apparently doesn't like extreme heat, but seems to thrive better with a moderate, even, temperature, particularly if it can get the cooling influence of a breeze occasionally, but the Sultana stands up to high temperatures with much less effect on the quality of the fruit.

Gordos have been scorched where exposed to the full rays of the sun, but here again the loss is not so great as might have been expected. Doradillas on shallow land have lost their leaves and left the fruit to the tender mercies of the sun. These vines are naturally more shallow-rooted than any other variety, and where they are planted on shallow soil they cannot stand up to a long spell of heat, but here again the loss is individual and not general.

Pears are showing a particularly heavy crop, and as Duchess is the only variety grown commercially, we depend to a large extent on getting a portion of our crop away to the cannery. This year, however, we have received instruction that purchases of this fruit will be limited owing to the large carry-over of canned fruit from last year, and as Messrs. H. Jones & Co. are the only purchasers of this fruit, we have no alternative but to dry the crop. Many of our Pear growers have not enough drying plant to cope with their entire crop, and this means a heavy purchase of trays, or borrowing from Apricot growers—an unsatisfactory procedure.

Pear Trees Affected.

A peculiar affliction has affected the Pear trees during the intense heat recently. The leaves on many trees have turned black and fallen off. This effect is almost identical with that of Fusicladium, but as few previous symptoms have been in evidence, it is somewhat puzzling to account for the sudden attack. Whether the humid conditions induced by irrigation has developed the spores with lightning rapidity, or whether the effect is caused by intense heat, is hard for a layman to decide. The loss of leaves is of so much importance as to cause a visit from the Plant Pathologist of the Waite Institute (Mr. Adam), the Research Officer of the S.A. Department of Agriculture (Mr. Kempe), the District Horticultural Adviser (Mr. Arndt) and the manager of the Berri Experimental Orchard (Mr. Halliday). Specimens of leaves have been taken away for examination. The same condition of leaves blacken-

ing occurred on some trees after the fruit was harvested last season, and in every case where this happened, a poor crop set on the trees. It is so seldom we have to treat our Pear trees for anything except an occasional spraying for Red Spider (perhaps once in 5 years) and for Codling Moth, that Pear growers feel that nature has treated them badly in this unexpected attack of leaf fall. In spite of this, there is still a bigger crop of Pears than in normal years.

The January flight of moths occurred on the 20th of the month, when a particularly large number was caught in the molasses pots. The first brood came about October 10, the delayed brood of overwintering grubs appeared on November 7, after which only a "straggler" was caught until January 20. On more than one occasion I have stressed the importance of each individual grower maintaining his own lure pots for the purpose of accurately defining the moth flights which in turn determines the time for applying sprays. It is easy to spray often and to a calendar schedule and still miss the vital and most effective time. Up to the present I have only sprayed 3 times, twice for the calyx brood and once for the November 7 brood, and the fruit shows less than 1 per cent. affection at present. One of my neighbours has sprayed 5 times and shows no more clean fruit. Spraying will be again carried out in a week or ten days, according to the daily temperature. It has been determined that eggs emerge in from 5 to 10 days, the time being influenced by the daily temperature, and spraying should be done in a week to about two weeks after the flight of moths occurred. From the experiments made in this locality I find a variation in the time of moth flights within a distance of two miles, and if one test were made for a whole district, then I feel sure that variable results would follow.—"Nemo."

Renmark, January 24.

Since the above notes were written we have received word that Messrs. H. Jones & Co. were taking their normal quantity of Pears from this district. I understand that a good deal of the uncertainty in this direction has been occasioned by the lateness of the date in price fixation for Pears for canning in this State.

Pears were ready for picking before the price was fixed, but in the meantime a tentative offer of £8 per ton was made, with the proviso that should the price be higher, then the adjustment would be made, or the grower who keeps a careful account of the cost of picking for canning purposes and the cost of drying, it will be found that this fruit shows a small margin in favor of drying when the canning price is £10 per ton. It is my considered opinion that should the price be ever fixed at £8, the greater part of the crop would be dried.

Owing to the uncertainty of the positioning this year, many growers have increased their drying plant and will now dry the entire crop.

It is a pity that the season's prices for Pears could not be fixed in the

BABIES IN COOL STORAGE.

There is a story that during a heat wave in America the hens were given cracked ice to prevent them laying hard-boiled eggs.

It might not have been so bad as that at Griffith, on the Murrumbidgee Irrigation Area, during the recent heat wave, but our correspondent in that centre tells a true story of a truly unusual method adopted to safeguard the lives of a number of babies in the settlement.

With shade temperatures ranging from 116 to 122 degrees, the little ones were becoming exhausted when the Griffith Producers' Company made its cool-storage rooms available, and a number of lives were saved by this means.

first week in January, so as to give ample time to make the necessary arrangements to handle the crop, whether it is to be canned or dried.—"Nemo."

NEW VARIETY OF NUT.

Soft-Shelled Macadamia.

NUT-GROWERS will be interested in a recommendation made by Mr. E. C. Cheel, formerly Botanist and Curator of the National Herbarium in Sydney, that the Australian Bopple nut, *Macadamia ternifolia*, has good commercial prospects.

The kernel itself is recognised as one of the choicest nuts in cultivation, but one difficulty in the past has been its hard shell. Mr. Cheel has submitted specimens of soft-shelled Macadamia nuts grown on the Tweed River, N.S.W., and recommends that this type of tree should be much more extensively cultivated in the coastal areas. The tree itself is a handsome one, and should be grown even for shade and shelter belts.

Mr. Cheel states that by careful selection improved varieties can be obtained — those with larger yields and soft-shelled nuts. He points out that considerable developments have taken place in Honolulu and California in Macadamia nut growing.

DRIED FRUIT SALES.

According to registrations of sales in Great Britain for the week ending January 19, renewed interest is being taken by the trade in Australian Sultanas. During the previous week 1,212 tons of Sultanas were sold at an average of £38/10/9 per ton. Small sales of Currants to the extent of 45 tons were made at an average of £25/10/5 per ton. The spot stocks of Currants in London are now at the negligible figure of 861 tons.

It is anticipated that there will be a reasonably strong demand for Sultanas owing to the good quality of the fruit, and no doubt owing to the uncertainty as to the coming crop.

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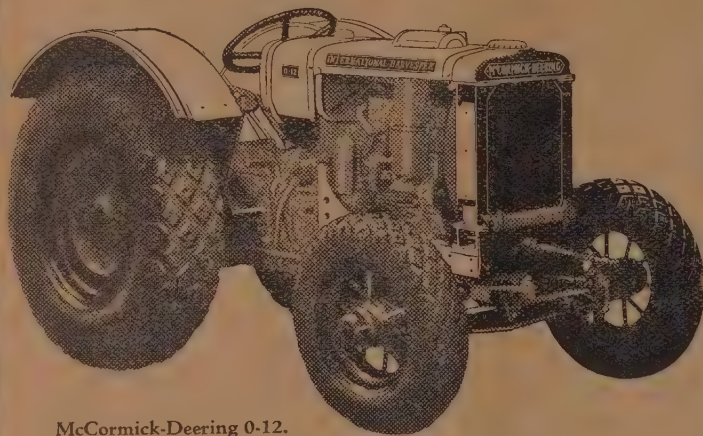
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Last fruit season the Brighton Ice Works and Cool Storage erected a fine new cool store with special facilities for handling fruit. The total capacity offered to growers is 85,000 cubic feet and the whole equipment is new and up to date.

Rail consignments should be directed to North Brighton Railway Siding, but for nearby orchards an insulated motor transport service is available. The transport charges are most reasonable and the company will be glad to advise growers of this service as well as any other information desired. The telephone number is X 2015.



Front approach to the Cool Store.

New South Wales

SYDNEY SHOW.

Numerous Sections for Fruit.

Catalogues for the Royal Sydney Show, to be held at Easter, are available from the Secretary of the Royal Agricultural Association of N.S.W., Sydney.

The schedules for fruit are very comprehensive covering Apples, Pears, Grapes, Quinces, Persimmons, Passionfruit, Peaches, etc., and citrus fruits. Special attention is directed to the district collection of Apples, £200 in prizes, and the district collection of Pears £50 in prizes.

Interstate growers interested in the export Apple sections will observe that one portion of their entry will be judged at the Sydney Show and the other forwarded to London for judging there. The fruit for London will be shipped by the R.M.S. "Orama," leaving Sydney on April 5. Fruit from N.S.W. must be lodged with the N.S.W. Fresh Fruit Markets Company, Harbor-street, Sydney, by March 31. Interstate entries can be lodged with Esmond Russell Pty. Ltd., Melbourne (Victoria); Western Australian Farmers' Association Ltd., Perth (Western Australia); W. H. Ikin & Son, Dunn-street, Hobart (Southern Tasmania); The Tasmanian Orchardists and Producers' Co-op. Assoc. Ltd., Launceston (Northern Tasmania).

N.S.W. FRUIT INDUSTRY ENQUIRY.

Report Available at end of February.

The fruit industry throughout Australia is awaiting with a lot of interest the report of Mr. McCulloch, S.M., who recently conducted an exhaustive enquiry into the fruit industry of N.S.W.

The term for presenting this report was recently extended to February 24.

BATLOW'S CIDER INDUSTRY.

Appreciation by Sir Earle Page

"Here's luck," says Bert Smith.

On a recent visit to Tumut, N.S.W., which is near to the famous Batlow Apple-growing area, the Minister for Commerce, Sir E. Page, requested a drink of cider, but found it to be unobtainable.

This caused a good deal of surprise, and the advertisement has been such that in future, not only Tumut, but many other towns as well, will stock this valued beverage.

But trust Batlow for enterprise! As the train carrying Sir Earle Page back to Sydney drew in at Gundagai, a motor car dashed up and a brown paper parcel was thrust through the window of the Ministerial compartment. It contained two bottles of Batlow cider with the message "Here's luck."

BUDDING DECIDUOUS TREES.

Mature buds can now be obtained from the current season's growth of deciduous fruit trees, and if the nursery stock or the young shoots of established trees that have been cut back at the end of the Winter in preparation for budding are large enough and provided the sap of the stocks is running freely, permitting the bark to lift clean, the present is an excellent time to carry out budding operations.

It is a wise plan, states the N.S.W. Department of Agriculture, to examine established trees that have been previously grafted with another variety, for, where grafts have failed, buds of the desired variety can be inserted into suitable shoots springing from the original tree. This applies also to trees that have been grafted by any of the multi-graft methods.

REVISED QUOTA FOR PEACHES.

The State Dried Fruits Boards of South Australia, Victoria and New South Wales, on a review of the total production of dried Peaches produced in the season 1929 and Commonwealth market requirements, have agreed to increase the home consumption quota for Peaches from 55 per cent. to 57½ per cent.

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Boron-Deficiency Disease in Apples

(By J. Cossey, B.Sc., D.I.C.)

AMONG the many crop disorders which have now been proved to be due to a deficiency of natural boron in the soil, the cork disease of Apples rank second only in world importance to the first established boron-deficiency disease, Heart Rot of Sugar Beets. In Australia and New Zealand, however, and likewise in Canada and the U.S.A., the fruit

The "Cork" Diseases.

All disorders of this group are curable by boron.

General: In common with all boron-deficiency diseases, the "cork" troubles are intensified by light soils, high alkalinity and dry seasons. Both the fruit and the trees react to a deficiency of boron, the foliage of the latter sometimes developing a characteristic leaf scorch.

Internal Cork has no external symptoms, although in bad cases the Apples become deformed and knobby in appearance. The first signs are the existence anywhere in the flesh of the fruit of slightly green translucent spots, which later dry out and form dark brown spongy lesions with a characteristic green margin. This latter is most marked in the case of the varieties Sturmer and Granny Smith. A premature redness of the skin occurs in some cases.

Corky Core is a specialised form of Internal Cork, in which the spots are localised to, and very often envelope, the whole of the core. This type is extremely prevalent in Jonathans.

Corky Pit is the name for Internal Cork originated in New Zealand by Atkinson, the discoverer of the boron cure.

Drought Spot is a form of the disease having external symptoms. The fruit become in turn dwarfed, deformed, russeted and cracked. Poverty Pit, Brownheart and Crinkle are other names by which the above diseases are known.

Dieback affects mainly the terminal shoots of the young branches, which wilt and often die, giving in course of time a short and stunted tree. Forcing growth by applying nitrogenous manures increases the disorder.

Internal Cork and Corky Core are widely known throughout the Apple growing districts of Australasia and North America, while Drought Spot, so far as is at present known, occurs mainly in North America.

Possibilities of Boron.

Reports on the possibilities of boron first reached Australia from New Zealand, when, in confirmation of Atkinson's discovery that boron would cure Internal Cork, Askew proved by analysis that healthy Apples contain approximately three times as much boron as diseased ones, and further that the boron contents of the latter were inversely proportional to the severity of the attack.

Whilst the boron-deficiency diseases are most severe on light dry soils, seasonal conditions are responsible for their occurrence on loams and

disorders take precedence. On the European Continent, where Apple cultivation occupies a less prominent position, the reverse is the case.

The different types of the cork diseases and their relation to the true pit troubles are given in the following table, which is of special interest because the two disorders are often confused.

The "Pit" Diseases.

These disorders are not curable by boron.

General: Unlike those of the "cork" group, the "pit" diseases proper are associated with a high moisture content of the soil. Their cure is still unknown.

Bitter Pit is also known as Baldwin Spot and York Spot (U.S.A.). Well-defined slightly sunken dark green areas appear, mostly at the blossom end of the fruit. A dry or corky pocket exists underneath. Prevalent in wet years.

Storage Pit develops after the crop is gathered and put into storage. The cause of the internal breakdown of the Apple tissues is as yet unknown.

Blotchy Cork is a true pit disease in which the affected areas on the skin become joined up to form large irregular dark patches, quite distinct from the usually well-defined "pits" typical of Bitter Pit. Possibly associated with low calcium content of the soil.

Water-Core: The flesh immediately surrounding the core becomes glassy and watery. Cure unknown.

clays, and so long as the natural boron reserves of the latter are not supplemented by artificial means, some or all of the diseases mentioned in the first column above may be expected to increase in prevalence as time passes by. The diseases are not caused by any living organism and are, therefore, neither transmissible nor infectious. Insufficiency of a certain food material appears to be the sole cause, and this explains why the disorders sometimes occur only in patches in a field or orchard.

Treatment.

BORON is an element similar to nitrogen, phosphorus and potassium, and just as essential for healthy plant growth. The only difference lies in the amount required by the plant in order for it to make normal growth, and this is a matter of 2-3 stones of boron-containing

material per acre compared with 3-4 cwt. of the artificials used to supply some or all of the three major plant nutrients. Boron, as such, is unknown commercially, but it is readily available in the form of its compounds, borax and boric (boric) acid. On a unit basis, 1 part of the acid is approximately equal to 1½ parts of borax. The latter is boron at a lower cost, it is a greater favor for fertilising purposes. The rates for general application which can be safely recommended, are as follows, but the quantities can be increased with safety on land definitely known to be deficient in boron:—

Age of tree under 13 years: ½ lb. borax per tree; ¼ lb. Boric Acid (4) per tree.

Age of tree 15 to 20 years: ½ lb. Borax per tree; ¼ lb. Boric Acid (4), per tree.

Age of tree over 20 years: ¾ lb. Borax per tree; ¼ lb. Boric Acid (4) per tree.

Spraying Not Recommended.

The boron-containing fertiliser is broadcast evenly on the soil over an area within the spread of the trees' branches at any time after one crop has been harvested and up till about 3 weeks before the blooming of the next one. The earlier the application, the deeper the boron penetrates and the more of it reaches the feeding roots in time for the quick Spring growth. The boron compound can also be sprayed with good results, but since this treatment is more costly and then lacks the permanency of the soil application, the latter is preferable.

It must be stressed that, except for Drought Spot, no notable external symptoms appear, and what look to be healthy fruit at mid-season may easily result in an unmarketable crop at harvest. To detect Internal Cork, the Apple has to be cut, preferably transversely.

Proof of Efficacy.

When boron was first used in British Columbia in orchards badly affected with "Cork," increased yields of 100-300 per cent. were quite common. During the Summer of 1937, a commercial grower (R. Larsen) in the Okanagan, U.S.A., who, to quote his own words, "... is always willing to apply any promising orchard practice in which the danger of loss is negligible and the cost not excessive," treated 17,000 trees with ½ lb. boric acid each. These trees had borne corky Apples in two previous seasons, but the first boron treatment gave an entirely clean crop, and, moreover, corrected other minor disorders in addition. These results, which are also confirmed by the Summerland Experimental Station, B.C., are brought about by the flattening of the Apple from the stem to the calyx end, thereby producing Apples more true to type, and by preventing losses through premature falling of the crop and making the fruit hang more firmly to the trees. The set of the fruit following blooming is also increased.

Confirmation of the effect of boron was obtained in the Kentucky district of N.S.W. (7) in 1936-7 in connection with the foliage, which was a darker green and did not fall off so early as that on untreated trees. The various troubles arising from boron starvation are said to increase with

the age of the trees. Further, in preliminary experiments by Young and Winter, (8) a disease termed "Apple" Measles, which is fairly prevalent in the Ohio State of the U.S. and which consists of a pimplly necrotic condition of the bark, has been controlled by boron. Confirmatory work is now under way. The affected trees make slow growth, produce large numbers of suckers and frequently die.

Other Fruits.

Last season's experimental work in Canada has also added to our knowledge of the cork diseases of other fruits. The Gum Spot in Plum and Prune can be successfully prevented, as can some types of Drought Spot in Pears. A Cork Spot in Pears (9) having symptoms analogous to Internal Cork of Apples, has been known for years in Washington State of U.S.A., and is thought to be due to boron-deficiency. However, in Tasmania, Cork of Pears (1) has not yet yielded satisfactorily to the boron treatment, and it is doubtful whether in this instance it is a true boron deficiency disease. The dieback condition, known in most fruit trees, including Peaches, Plums, Pears and Cherries, was also controllable by boron.

Quite recently a disease of citrus fruits called in Rhodesia the "hard fruit" condition (10) has been very successfully prevented by using borax and extensive field experiments are taking place this year. The disease has not been recorded outside Rhodesia, but similar troubles in other countries may yet be identified with the same cause.

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*Gerrard Sales
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The Gerrard Fruit Packing Charts for Apples, Pears, Citrus are available, post free, on application.

Write: GERRARD WIRE TYING MACHINES CO. PTY. LTD.

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Motor Cars, Trucks, Tractors

THE DOG IN THE CAR.

Cruelty That Can Be Avoided.

ALL DOGS acquire a fondness for riding in cars, although some, like humans, are apt to become car-sick. For car-sickness in dogs, a dose of chloretone given before the journey is often beneficial. Canine motorists love to poke their noses out of the car window and feel the breeze on their faces, but dogs' eyes are susceptible to strong draughts and the habit should be discouraged.

When going on a long journey it is well to remember that the dog gets thirsty as well as hungry, and that his thirst does not always coincide with local facilities for quenching it.

A bottle of water and a bowl should always be carried when a dog is included in a motoring party.

It is a mistake to leave a dog on guard in a parked car with the windows closed, and without taking the precaution to see that the car is in the shade and will so remain as the sun moves round. If this precaution is neglected the risk is run of finding, on your return, a half-suffocated dog, for all motorists know how furnace-like a closed car left in the sun can become.

Never take your dog out in the car unless his collar bears your full name and address. He may stray at one of your pull-ups—and a dog trying to make his way home through strange territory, perhaps a hundred miles distant, is something to be pitied.



WHAT A GREAT RANGE of Utilities Chevrolet has produced! There are three distinctly different chassis—12, 15 and 20 cwt. There are 29 models to choose from. Every desirable body-style is available. And these Chevrolet Utilities are engineered to save you money in five ways.

YES, in five ways, Chevrolet delivery vehicles save you money. They save you money in the low first cost—in the low operating cost—in the low maintenance cost—in the high resale value—and in the general hauling efficiency they give you.

THE SMOOTH, powerful 6-Cylinder Overhead Valve Engines never need replacing—a point well worth remembering when you are making your first decision. The new Diaphragm Spring Clutch gives equal pressure distribution, prolongs the life of the clutch linings, safeguards the flywheel faces—another point worth remembering if you want a Utility that can stand the racket of constant stop-and-go work.

INDEPENDENT Front Wheel Springing (Master models) smooths out the journey, protects the cargo. Double Articulated, Self-energising Hydraulic Brakes, put quicker, surer power in your stops. Silent Synchro-mesh Transmission peps up acceleration, enables you to make swifter, clashless changes at all speeds.

IF you need a unit for fast, light delivering, then you should take a good look at the Chevrolet range. You'll like them, not only on the way they perform, but for the good looking style of them, the prestige they add to your business. Let's give you a demonstration.



PRESTON MOTORS PTY. LTD.

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OVER-INFLATED TYRES.

Common Cause of Serious Wear.

"A short life and a gay one" can be aptly applied to the over-inflated tyre. Over-inflation is undoubtedly the cause of almost as many premature tyre failures, as under-inflation, yet many motorists deliberately over-inflate their tyres in the mistaken belief that it affords added protection. The truth is that over-inflated tyres bounce, skid and wear out fast.

Goodyear engineers report that the worst and most costly result of over-inflation is rapid tread wear, which shows up very early; this is caused by over-inflation allowing only a small area of the tread, instead of its full width, to meet the road, which soon grinds it off. The unyielding over-inflated tyre suffers the full force of impact with the road without any resilient cushion of air to soften the blow. It is also more likely to skid on both wet and dry roads owing to the small areas of road contact, and that area a hard one. Over-inflation will also give rough riding to a car, as the tyre will bounce and spin on rough roads. For maximum service under all conditions, tyres should be inflated in accordance with the tyre manufacturer's recommendation.

WHEN EVERYTHING FAILS.

If the battery is rather an old one, here is a tip which may save considerable worry one day. The corroded material which collects around the terminals sometimes causes a sudden increase in resistance on the passage of heavy current as occurs when the starter button is pressed.

This will result in the whole electrical system suddenly going dead for no apparent reason. Not only is the starter useless, but lights and ignition as well. The proper remedy is to remove and thoroughly scrape the terminals, particularly the positive, but merely to loosen the clamp and oscillate the terminal on the lead battery post a few times will effect a temporary cure.

DISMANTLING A PLUG.

One of the most important tools to have in the kit is a spanner which fits the body of the spark plugs properly. Removing them from the engine by using an open spanner on the gland nut will result in distortion of the nut and consequent compression leakage from the plug. When dismantling a plug for cleaning, use a box or ring spanner on the gland nut, and when reassembling, be careful that no grit finds its way under the gaskets on which the central electrode is bedded. If everything is properly assembled, there is no risk of damaging the insulator by screwing down the gland nut firmly.

"BLEEDING" OF BRAKES.

Many motorists seem to be in doubt about how often their hydraulic brakes should be bled—the hydraulic fluid run out and replaced. Actually there is no time or distance rule, and it does no good to bleed brakes unnecessarily. The best guide is when the brake pedal becomes "spongy" to foot pressure.

Of course, if any pipe has been disconnected the brakes must be bled, but bleeding does not come under the category of a periodical service job.

POWER ALCOHOL IN QUEENSLAND.

Rapid Increase of Sales.

BEFORE THE INTRODUCTION of the Motor Spirit Vendors' Acts of 1933-34, the production of power alcohol in Queensland was 100,000 gallons a year. In the six months ended June 30, 1938, motor spirit companies purchased 316,200 gallons.

These figures are given in an official statement from the Premier's Office to show the efficacy of the Act in assisting the power alcohol industry. The Act requires vendors of motor spirit to purchase 1½ gallons of power alcohol for every 100 gallons of motor spirit sold. In 1936, the purchases were 37,842,404 gallons of motor spirit, and 588,708 gallons of power alcohol. In 1937, 40,602,595 gallons of motor spirit were sold, and 615,409 gallons of power alcohol purchased.

During the six months to June 30, 1938, the sale of motor spirit was 20,981,317 gallons, and the purchase of power alcohol 316,205 gallons. For July, 1938, sales of motor spirit totalled 3,559,043 gallons, and purchases of power alcohol 67,672 gallons; and for August, sales of motor spirit were 3,531,325 gallons, and purchases of power alcohol 59,469 gallons.

DANGER OF PETROL LEAKAGES.

Most of the fires in which cars are damaged or destroyed are due to petrol leakages, due either to fractured pipes or carburettor flooding. Ignition occurs either through leakage on to the exhaust or a backfire through the carburettor.

In modern cars the risk is lower because petrol pump feed involves carrying only a small amount of petrol near the engine, while most modern forms of air cleaner act also as flame traps.

In the event of a fire under the bonnet turn off the petrol supply if from a gravity or vacuum tank. Then, in the absence of a fire extinguisher, use sand or earth to smother the flames, and soak up the burning fuel. As a safeguard have any petrol leaks remedied promptly when first noticed.

USE ROAD SIGNALS CAREFULLY

The Royal Automobile Club of Victoria issues a warning to motorists that there are often circumstances in which the correct use of the proper traffic signals will not entirely absolve them from blame in the case of an accident.

Traffic signals of the type of "slowing down," "turning" or "stopping" should never be given blindly. Always, except in an emergency, the driver should make sure that it is safe for him to carry out his intention and then give his signal.

In such cases the signal becomes a safeguard for any following vehicle which may have been hidden, and a courtesy for other drivers who will be inconvenienced by knowing of another driver's intentions well in advance.

"And," says the club, "do not try to shift your driving responsibility on to the hooter by using it as a substitute for safe driving and the intelligent anticipation of possible danger. Inconsiderate use of hooters has caused much anti-motoring prejudice in the past."

CANNING AND JAM FRUITS

The Goulburn Valley, Victoria

(From Our Correspondent.)

THE MOST OUTSTANDING event of the month was the terrific heat wave, and disastrous bush fires causing 66 deaths, which was unparalleled in the history of the State.

Temperatures in the Goulburn Valley broke all records. Tuesday, January 10, had a shade temperature of 115 deg., while Friday, the 13th, broke all records of 118 in shade and 105 at midnight. The day was almost unbearable, with scorching hot winds and dust storms which played havoc with the fruit crop, particularly the Pear crop, which got a decided check, the leaves becoming scorched with the hot sun and for the time being the fruit ceased growing and picking operations were held up for over a week, as the fruit was too small to meet cannery requirements.

The standard set for Pears was a minimum of 2½ inches, but owing to the smallness of the Pears through climatic conditions, canners decided to take all Pears down to 2¼ inches; even then there will only be light supplies, as the Pear crop is picking out much lighter than expected, and the losses through Codling Moth, wind storms and heat have been heavy.

Prices on the Melbourne and Sydney markets have been quite satisfactory, and large quantities of small Pears are daily going on to these markets and are realising 8/- per case, while Tomatoes from the Valley are selling particularly well and growers are having a good season with Tomatoes.

In spite of the continued methodical spraying, Codling Moth is particularly bad this season, caused through the hot, dry conditions which dries the killing power out of the lead. While the damage done by Oriental Peach Moth is the lowest for many years, it is thought that the heat wave in January killed the fresh laid eggs on the trees, which would assist in lightening future broods.

Fruitgrowers have been warned by the Executive of the Shepparton Irrigators' Association that consignments of Pears to the Sydney markets are being inspected at Albury and if discovered to be affected with Codling Moth; the fruit will be returned at the expense of the grower concerned.

In its recent current circular, the Shepparton Fruit Growers' Advisory Committee suggests that attention be given to the regular picking up and destroying all affected fallen fruits, all available evidence in this district points to the procedure being of great value, in the reduction of the Codling population in the orchards for the

forthcoming season. All bands should still be attended to, particularly where W.B.C. Pears are adjacent to the export varieties.

Referring to Peaches, the circular stated:—

Owing to the unfavorable growing season, it is suggested that where the late Peach crop is not growing satisfactorily, a dressing of up to 2 lbs. per tree of nitrate of soda be applied immediately. Care is necessary in the application of nitrate of soda, as too heavy dressing in usual seasons is apt to retard the ripening of the crop.

The method of application requires attention. Nitrate of soda is very soluble in water, and if applied prior to irrigation, is likely to be washed to the lower ends of the rows, and there concentrates, with possible danger to the trees at the end. If applied before irrigation it should be cultivated in. A satisfactory method is to apply the fertiliser when the irrigation water is soaking in, before the surface dries out.

This recommendation applies equally to export Pears.

Where growers have not thinned out the late varieties of Peaches, this should be done immediately.

Irrigation Supplies.

Canners Reassured.

The Minister for Water Supply (Mr. Old) reassured representatives of the Goulburn Valley Orchardists and Canners that the State Ministry would do everything possible to provide water for the orchards.

In order to ascertain the position regarding deliveries of water during March, representatives of the Co-operative Canneries, Messrs. A. W. Fairley, Shepparton; J. H. Monk, Ardmona, and J. Gent, Kyabram, together with the officials of the Northern Victoria Fruit Growers' Association, including the President (Mr. W. Young), Vice-President (Mr. W. F. Cooper) and Mr. S. P. Cornish, Secretary, interviewed the Minister of Water Supply and the acting Chairman of the Water Commission, Mr. H. Hanslow. The party was accompanied by Mr. J. G. B. McDonald, M.L.A.

They discussed the seriousness of the water position, pointing out that not only the growers, but the State generally would suffer if there was insufficient water, a shortage of which would prevent lateral growth and cause next year's crop to fail.

Minister's Reply.

Mr. Old said the position was reasonably familiar to him, and quite

familiar to them. The Government, the Commission and himself were fully seized with the importance of the industry. From the production viewpoint it meant a great deal to Australia. Then there was also the viewpoint of providing labor and the means for the growers to obtain a livelihood. The industry also helped to preserve Australia's trade balance.

The Government wanted to work in co-operation with them so far as was practicable, and be fair to everyone concerned. The Government would do everything possible to assist their industry, and be fair to all.

Mr. Hanslow said the Commission recognised that water was essential for their industry. The Commission expected the gravitation supply from the Goulburn Weir to peter out about February 23. They proposed to hold the Goulburn down on the Weir at the 9 ft. level and would shut off all water going to the Waranga Basin. There would be water for the late waterings at Shepparton. They would supply 6,000 acre feet to Rodney and after that Rochester would water and then Tongala and Stanhope. Mr. Hanslow added that the present flow would be increased to 550 acre feet per day.

Right from the first period of the drought the Commission had been alive to the serious position that might develop.

NEW MACHINERY AT CANNERY.

S.P.C. Installs New Line.

A new line of can-making machinery installed at the Shepparton Fruit Preserving Company and just commenced operation, show a remarkable advancement on former equipment. The units, which are fool proof under electrical control, turn out from 280 to 300 completed cans per minute working from sheet tin to the completed and comprehensively tested can.

NEW FREESTONE PEACH.

"The Rosy Ritz."

A new early variety of freestone Peach is reported from Georgia, U.S.A. It has been propagated by John T. McKenzie, of Montezuma, and named the Rosy Ritz. It is reported to be juicy, highly colored, yellow meat with an Elberta flavor. It is claimed that it will be one of the earliest freestones. It has the shape of the Hiley with a long pronounced tip. Although its production will be limited for the present, Mr. McKenzie has a large orchard planted for later commercial distribution. Samples shown were commented upon for their flavor and heavy juice contents.

Fruit Prices

Prices for Canning Peaches Reduced
£1/10/- Ton—No Change in Pears.

Pack Will be Much Smaller.

Minimum prices to growers for new season's canning Peaches and Pears were announced on the 19th inst. by the Chairman of the Fruit Industry Sugar Concession Committee, Mr. A. R. Townsend.

Clingstone Peaches at £9/10/- a ton for clear centres, and £8/10/- per ton for red centres showed a reduction of £1/10/- per ton on last year's prices; Freestone Peaches were unchanged at £7; Peaches for jam were reduced £1 to £6 per ton. Apricot prices were fixed some weeks ago at the unchanged level of £12 for canning and £10 for jam.

The reduction in Peach prices was explained by Mr. Townsend by the depressed overseas market position for canned Peaches which was menaced by the record large quantity of unsold stocks in California.

In the circumstances he said prices to be paid growers for Peaches in Australia this season could be regarded as decidedly satisfactory.

No change had been made in Pears as the position overseas was sound.

It was difficult to estimate, Mr. Townsend continued, the extent of the new season pack of canned Apricots, Peaches and Pears, but it appeared there would be a reduction of from 30 to 50 per cent. on last season's record of slightly more than 3,000,000 cases, due to adverse weather conditions.

CANADIAN FRUIT JUICES.

Extensive Advertising.

The volume of production and the advertising of juices, especially of Tomato juice, Pineapple juice and Grapefruit juice, have increased enormously in America during the past few years. The latest campaign is one for Valencia juice.

Tomato juice output has skyrocketed from around 200,000 cases in 1928-29 to 15,000,000 cases of 24 cans in 1936-37. Pineapple juice, an unimportant by-product of the Pineapple industry five years ago, to-day shows a production of 5,000,000 cases. Grapefruit juice, which amounted to a pack of only 205,000 nine years ago, last year had a total of 8,445,000 cases.

Teacher: "Where does salmon come from?"

Tommy: "Please, sir, it floats down the rivers in tins."

*Gerrard Sales
and Service*

A penny spent on Gerrard (wire-seal strapping) goes a long way in safe transport.

GERRARD WIRE TYING MACHINES CO. PTY. LTD.

MELBOURNE — SYDNEY — BRISBANE — TOWNSVILLE
PERTH — ADELAIDE — HOBART



CANNING & JAM FRUITS—(Continued)

THE CANNING OF GRAPEFRUIT.

Opportunities for Development.

PROMISING POSSIBILITIES in the canning of Grapefruit are indicated by a recent report issued by the N.S.W. Department of Agriculture.

It is pointed out that up till recently the inferior quality of the average fruit available has been a handicap.

In 1937, Marsh Grapefruit on other stocks than rough Lemon became available. Tests were made, indicating that the canned fruit from trees on trifoliata (Japanese deciduous) stock was superior to the old type on rough Lemon, Cleopatra or Seville Orange fruit for a number of years, believing that there should be a considerable market within the Commonwealth.

The tests were repeated on a large scale last year, and the results were confirmed.

In describing the tests, Mr. R. J. Benton, Special Fruit Instructor, stated that 16 samples were used in the comparison. Four represented the Wheeny variety of Grapefruit, and the balance the Marsh type. The opportunity was taken also to compare the quality of the varieties affected by stock influence with samples of Florida processed fruit.

Continuing, the report states there are indications that the Florida product is in palatability somewhat more pleasing than that locally processed, but it was very gratifying to note that the quality of the processing in the local product was superior. Possibly the reason for this is the additional breaking of the segments in transit of the imported canned fruit. From the specimens tested, it is apparent that the Wheeny variety is unsatisfactory as a canned product.

Unfortunately, the great bulk of the Grapefruit trees grown locally are on rough Lemon stock. The indications are, however, that the improved quality, both in fresh and

canned fruit, of that grown on trifoliata stock is well worth considering by growers who intend to plant Grapefruit.

The fruit submitted for the canning tests was grown at the Yanco Rice Research Station. It was picked from trees not more than seven years old. Mr. Benton states that, while the trifoliata stock influenced the production of fruit of vastly improved quality, it was not apparent that its dwarfing effect was as pronounced as it is frequently when used with Orange varieties.

NEW PLUM IN CANADA.

Hybrid Twice Normal Size.

A NEW PLUM TREE has been developed here by hybridising methods which grow fruit twice the size of the normal Plum, has fine keeping qualities and is of excellent dessert quality. The new Plum, produced by Carmine Maglio, a 75-year-old resident of Nelson, near Vancouver, has now been grown on a commercial basis and has already attracted world-wide notice. The buyer of a large chain store of English restaurants investigated the new Plum and has contracted for the 1939 crop. He also purchased five young trees that were available and shipped them to England, where they will be planted in the famous Royal Botanical Gardens at Kew, London.

WOODMASONS.

Three Big Cool Stores.

Again the well-known and modern cool stores of Woodmasons are offered to fruitgrowers for the present season. The company has been operating for the past 16 years, and the service for which it is noted is consistently maintained. It is significant that those growers who store at any of the Woodmason Stores come back year after year, being satisfied that efficient storage will be rendered.

Growers are reminded that cartage from Toorak, Oakleigh and Hawthorn stations is provided free to consignors. A telephone enquiry to U 2623 will receive immediate attention or by letter to 322 Glenferrie-road, Malvern, S.E.4, Vic.

CANNING PEACHES PRICE REDUCED.

Effect of Californian Stocks.

A REDUCTION OF £1/10/- PER TON, making the price to growers £9/10/- and £8/10/- respectively for clear centre and red centre Clingstone Peaches, has been announced by the Chairman of the Fruit Industry Sugar Concession Committee, Mr. A. R. Townsend.

Freestone Peaches are unchanged at £7. Peaches for jam were reduced £1 to £6. No alteration has been made in prices for Keiffer Pears (£8) or Bartlett's (£10). Apricot prices are unchanged at £10 for jam and £12 for canning.

Mr. Townsend explained that the reduction in Peaches was due to the depressed overseas market position of canned Peaches, which was menaced by the heavy stocks of Californian Peaches. In the circumstances the prices to be paid to Australian growers this season were satisfactory.

It was difficult to estimate, Mr. Townsend continued, the extent of the new season's pack of canned Apricots, Peaches and Pears, but it appeared there would be a reduction of from 30 to 50 per cent. on last season's record of slightly more than 3,000,000 cases, due to the adverse weather conditions.

Mr. Townsend said that £24,000 had been allotted by the committee for export assistance on canned fruits to the British market this season. Last season the figure was £48,000.

The committee had decided that any assistance to be given would be conditional only on the fruit being exported from Australia before December 31. Fruit shipped after that date would not receive a bounty.

CUBAN PINEAPPLES.

Enormous Increase in Output.

IN 1926 the Cuban pack of canned Pineapples was only 26,000 cases, but in 1938 the pack will be more than a quarter of a million cases. These figures are given in the "Western Canner and Packer." Practically the whole of the pack is exported.

The magnitude of the industry can be gauged from the fact that probable exports of fresh fruit to the United States are estimated at 1,250,000 crates, as compared with 1,068,568 crates during the same period last year. Exports to the United States for the complete calendar year 1937 totalled 1,237,930 crates, against 618,043 crates in 1936 and 649,030 crates in 1935. In addition to export in crates, approximately 100 carloads of bulk Pineapples will be exported to canneries, principally in Canada.

Canned Pineapple.

The Cuban canned Pineapple pack is small, but has shown a marked growth during the past two or three years. Practically all of the canned pack is exported.

The packs are estimated as follows:

1936—26,636 cases.

1937—167,418 cases.

1938—250,000 to 275,000 cases indicated.

Of the canned Pineapple, about 85 per cent. of the pack consists of crushed fruit, and the remaining 15 per cent. of sliced. Most of the pack is canned in No. 10 tins, and the rest in No. 1, 2, and 2½'s.

In addition to canned Pineapples, Cuba exported Pineapples in brine totalling 900,457 kilograms, valued at 59,984 dollars in 1936, and 612,062 kilograms, valued at 47,357 dollars in 1937, practically all of which went to the United States.

You Can't Get Good Prices for Bruised Fruit

PROTECT YOUR FRUIT WITH

ANTI-BRUZE CORRUGATED FRUIT PADS

MADE IN TASMANIA

Obtainable from Leading Distributors throughout Tasmania

In the following Sizes and Quantities:—

DUMP CASES—

SIDES (Plain or Vented) ... 17 x 14 500's

17 x 13 500's

17 x 8½ 1,000's

TOPS AND BOTTOMS ... 17 x 8 1,000's

CANADIAN CASES—

SIDES ... 17 x 10 1,000's

17 x 10½ 1,000's

TOPS AND BOTTOMS ... 17 x 11 1,000's

PEARS—

SIDES ... 13 x 6 1,000's

TOPS AND BOTTOMS ... 13 x 12 500's

Also Combination Packs of:—

DUMPS

(500 17 x 13)

(500 17 x 8)

CANADIAN

(500 17 x 10)

(500 17 x 11)

PEARS

(334 13 x 6)

(334 13 x 12)

ARE YOU

GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features with a host of others, was **THE "MONKEY" GRUBBER.**

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY

H. H. HINDS,
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THE MARKET GROWER

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Vegetable Culture

ONION BOARD POLL COMPLAINT — WATER RESTRICTIONS EASED — BIG TRUCKS AT MARKET — VINE FRUITS SET BADLY — ROOT CROP TROUBLES — CULTURAL NOTES.

(By Our Correspondent.)

AT the monthly committee meeting of the Vegetable Growers' Association, held at Moorabbin, there was a good attendance of members, those present being H. V. Barnett (President), Cr. C. C. A. George (Secretary), Mr. J. Stocks (Burwood), Cr. E. A. Le Page (Cheltenham), Mr. C. James (Cheltenham), Mr. J. Hawkes (Mordialloc), Cr. H. Beasant (Heatherton), and apologies from Mr. G. Ryan (Whealers Hill) and Mr. J. Mills (Keysborough).

The Secretary reported having received a communication from a member at Colac, who claimed that there were several Onion growers in his district who were entitled to be on the roll at the last Onion Board poll, who had not received a vote, and further stating that they had not had any opportunity to inspect the rolls prior to the election, as the rolls had not been on view at the Post Office as prescribed by the Act.

A reply was forwarded to Colac member advising him that if statutory evidence was available of any poll irregularities, the Association would give support in clearing the matter up.

Water Restrictions

Members discussed at considerable length the Board of Works proposal to impose water restrictions on vegetable growers in the form of not allowing sprinklers to be used on vegetable crops. It was the expressed general opinion that if this restriction were enforced it would mean a vegetable famine, for crops could not possibly be held by hand sprinkling, and those crops which had been planted to replace those lost in the recent gales were now just above the ground, and in a very tender stage. If these were not watered when necessary, they would most certainly be burnt off, also crops which were in various stages of maturity, and which had been watered from the day they

were planted, would be a total loss if not given the necessary amount of water. Growers felt they were facing the most serious position of all time, and it was decided to forward a resolution to the Metropolitan Board of Works asking that they give every possible consideration to vegetable growers in allowing them to use sprinklers on their crops because of the serious effects to crops if water were not available. It was pointed out that this would eventually react on the health of the people of the State if the vegetable supply were cut off.

The Metropolitan Board of Works has now replied to the above resolution in the following terms:—The Board will allow vegetable growers who make application to use sprinklers on their crops, providing there is no undue waste, and constant watch is kept to see that sprinklers do not stand in one place too long, but vine crops and Cabbage and Cauliflowers must not be watered by sprinklers for six weeks after they have been planted.

This will probably mean hardships on some growers, but in all probability this restriction will be workable without too much loss. In any case, vegetable growers are not at all likely to waste any water, for it all has to be paid for at the rate of 1/- per thousand gallons, or £13/4/- per acre foot, and cost of production is the surest safeguard of economy.

Trucks Block Market

There were again several complaints of large transport trucks pulling into the market and while standing in between the sheds to unload, blocking any other traffic which may need to go higher up the market. The width of these transports prevents any other vehicle passing, and this at times causes a traffic jam right back into Victoria-street. It was resolved to approach the Market Committee asking that the right-of-way between the sheds be kept clear.

Vine Crops Backward

Great difficulty is being experienced in getting the fruit on vine crops to set. Turks, Marrows, and Melons are all backward, and, with the exceptionally hot days that are experienced every now and again the young fruit is burnt off. In spite of all watering, when these hot days occur, the foliage droops and allows the sun to get at the young fruit. Citron Melons are particularly affected, and unless rain falls within the next few days this crop is going to be a total failure. Also with young root crops such as Carrots, Parsnips and Beet-root. Great difficulty is being met with in getting these crops established. The land seems to have become tired of being artificially watered, and as the plants come into rough leaf they turn yellow and die off. One of the best remedies seems to be to hoe the crop lightly as soon as possible, but this is very difficult, as there is danger of smothering the plants which are so small, but even the lightest working lets the air into the land, and as the crop improves deeper workings can be effected.

The Value of Mulching

crops which are to be brought up by artificial watering cannot be too strongly stressed, for the moisture will hold in the land twice as long with a coat of mulch over the top, and this often means the difference between establishing or losing a crop;



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it also saves the land from being battered down as the sprinklers are applied, which is always a great asset with young crops.

Cabbage and Cauliflower plant beds should now be constantly watched for grub and aphids. At the first appearance of either of these pests, a liberal dusting should be applied to the plants. For the grub, arsenate of lead is the best remedy. This can be applied with a dust blower at any time, as long as the weather is reasonably calm. For the aphids, or blight, nicotine or Nico Dust should be applied; this must be done when the weather is reasonably warm, for the fumes work best on a hot day, but, if not able to wait for warm weather, good results can be obtained from more frequent dustings.

Grading and Marketing of Potatoes

(By H. H. Orchard, District Horticultural Adviser, in the South Australian "Journal of Agriculture.")

PROBABLY no better approach to the subject of grading and marketing of Potatoes is open than the quoting of two excerpts from a letter received recently by a South Australian fruitgrower from a Liverpool firm of fruit importers.

They are "Doubtless, from time to time, you have complaints of your Apples, and we believe you would like to hear that this particular lot comprised the finest Rome Beauties we have handled in many years' experience," and "Another season, if you are shipping this brand to Liverpool, we would be glad if you would advise us, so that we might keep a special look-out for it." Such unsolicited praise is a wonderful incentive to a grower, and is undoubtedly a most effective advertising medium for South Australia, but, and this is what I want to stress, the underlying tone is one of confidence created in the mind of the buyer, and herein lies the connection with the marketing of Potatoes, and for that matter, the marketing of any produce. Create confidence in the mind of the buyer and the produce will be sought after; when this is attained, the grower is able to concentrate his energies on the production side, to which he is probably better fitted, secure in the knowledge that he has done his part in the contract.

How then can this confidence be gained in the Potato market? From the grower's point of view, the best way is for him, conscientiously and consistently, to grade his Potatoes, that is, set up a standard and maintain that standard. It must not be inferred, however, nor is it suggested, that the whole of the blame, where mistrust exists, is attributed to the grower, but he certainly has a lead, which he does not always follow.

By grading is meant, amongst other things, the elimination of Potatoes showing signs of scab and other diseases, greening, mechanical injury, mis-shapen tubers, second growth, etc., which are too frequently found amongst the market Potatoes. Where the grading is done by the digger in the paddock; that is, where Potatoes are not pitted or stored, but go almost directly on to the market, unsatisfactory tubers will slip through. Paddock grading cannot be considered satisfactory; the digger is on piece-work generally, and is mainly concerned in getting the Potatoes into the bags, and should the grower not watch very closely at this stage, trouble will commence.

The size of the tuber must also be taken into consideration. All growers aim at heavy yields, it costing more to grow a light than a heavy crop. Where wide planting is practised, heavy yields are invariably associated with large tubers and the contrast between the largest and the smallest marketable sizes is too great, and in consequence, prices frequently suffer. The chip Potato trade, and big institutions such as hospitals and hotels, can utilize the very large tubers and it would be better were the Potatoes graded accordingly. The average market requirement, and certainly what the housewife requires, is a reasonably uniform Potato, of medium size, clean and sound. Another drawback to large tubers is the fact that they are frequently hollow.

Unfortunately, some growers are apt to go to the other extreme, and include in their table Potatoes, tubers too small for the purpose. Under grade standards which were recently gazetted in South Australia, the weight of No. 1 grade Potatoes for

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table use must not be less than 3 oz. This applies to Potatoes having a mature skin; the minimum weight of new Potatoes is fixed at 2 oz.

Under these regulations, which incidentally bring this State into conformity with the other Potato producing States, there are four grades, namely—No. 1 Grade, No. 2 Grade, New Potato Grade, and Seed Potatoes, and all packages must in future be marked with a true designation of the grade of Potatoes contained therein.

"No. 1 Grade shall consist of sound Potatoes of similar varietal characteristics, of normal shape, practically free from insect or fungus disease, and practically free from dirt or other foreign matter and damage caused by mechanical means or blemishes, including second growth, frost, sunburn, greening through exposure, sprouting or other injury or deterioration, and shall have a mature skin. The weight of tubers shall not be less than 3 oz. Potatoes shall be deemed to comply with the standard of No. 1 Grade, if at least 95 per cent. by weight comply with that standard."

"No. 2 Grade shall consist of sound Potatoes grown in South Australia, and of less than 3 oz. in weight. Such Potatoes may be sold for table use, provided they are packed in separate packages or are exposed for sale apart from any Potatoes of other grades mentioned in this regulation."

"New Potato Grade" shall comply with the standard of "No. 1 Grade," except that they need not have a mature skin, and shall not be less than 2 oz. in weight.

Potatoes shall be deemed to comply with the requirements of "New Potato Grade" if at least 95 per cent. by weight comply with that standard.

"Seed Potatoes" shall consist of sound Potatoes which are free from disease or insect pests, and which have been packed in packages legibly

branded with the grower's or packer's name, and address, and the name of the variety of the Potatoes. The weight of tubers shall not be less than 1½ oz.

Potatoes shall be deemed to comply with the requirements of "Seed Potatoes" if at least 95 per cent. by weight comply with that standard.

These regulations will no doubt cause a lot of comment, but they were framed with a view to assisting growers, and to bring conditions under which Potatoes are marketed in this State into line with those in other States where similar regulations have been in force for some years, and are working satisfactorily and to the benefit of the grower.

Now let us examine some of the defects. Mechanical injuries are those caused by fork stabs or bruises and are frequently the result of carelessness when digging or handling; diggers vary considerably in efficiency. Wet patches on the outside of the bags subsequent to digging are frequently caused by fork stabbed Potatoes rotting after being bagged, and naturally do not impress the merchant favorably.

There is also another feature connected with the digging which is not always considered, especially in conjunction with the weather, and that is the area dug prior to bagging. A large area or block might be all right in cool weather, but in hot weather, an unnecessarily large number of Potatoes are exposed to the sun and sunburn can cause serious loss. The open mouth of the full bag should also be immediately covered with, not the customary Potato haulms, but an empty sack, until such time as it is sewn up. Potato haulms are a potential source of danger; they may harbor the Potato moth or grub—probably both, if the weather is dry. The actual Potatoes may be free from both moth and grub, due to the sound

practice of moulding protecting them when in the ground, but by placing the haulms over the mouth of the bag, the moth, if present in them, will certainly work downwards and infect the contents, and later on the grower will probably wonder why he had "wormy" Potatoes.

In addition to protecting the growing tuber from possible infection, moulding prevents greening of the tuber which is an objectionable feature in table Potatoes. In seed Potatoes we know it is desirable, and Potatoes are spread out on racks to obtain that result prior to planting, but in table Potatoes, it is definitely undesirable, and Potatoes in any way affected should be culled. A loss sustained by the grower in this way, is really the result of wrong management of the Potato crop. It stands to reason that Potatoes growing near the surface will push through, and only by earthing them over in the process of moulding or hilling, can greening be checked.

Potatoes showing distinct traces of "scab," another of the common Potato diseases should not be put up for table use; although a slight trace of the disease may not be important, excessively "scabby" Potatoes if put on the market, react on prices to the detriment of conscientious growers, and might be responsible for the merchant looking further afield for his supplies. "Scabby" Potatoes are wasteful, although they may appear all right after peeling, but like the scab of the Apple, it is disfiguring, and as such, constitutes a defect and should not be marketed.

The inclusion of mis-shapen Potatoes is another defect within the control, to a large extent, of the grower in that they are usually the product of poor seed or "run out" seed; sometimes, they are caused by stiff and compacted soils, and sometimes through weather conditions. Aim at getting good seed, even if it costs more, or better still, keep for seed purposes, only that coming from good healthy tops. If this is done, mis-shapen Potatoes will be considerably reduced in the crop. Second

growth is generally a matter outside the control of the grower, except where irrigation is practised, and then the trouble should not occur. Too often Potatoes carrying second growth are seen on the market.

Perhaps by now growers are wondering how much waste they are going to have by strict interpretation of the regulations. In a well-grown crop, competitions have proved that the percentage of Potatoes suitable for table use is over 80 per cent. of the whole crop dug. From the remaining 20 per cent., saleable seed would absorb 15 per cent. at least, leaving only 5 per cent. unsaleable, though not necessarily waste. Some of the Mount Gambier competition crops in the past have yielded 85 per cent. table Potatoes, and in the Mount Compass competition last April, the first prize crop of 16 tons 6 cwt. of table Potatoes represented 91 per cent. of the whole crop as also did the second prize crop which went 14 tons to the acre.

Competitions serve a very good purpose in raising the standard. Growers can see what is required for the market when the produce from their competition plots is graded and only sound tubers of not less than minimum table size are retained and weighed. At times, growers have considered the grading drastic because Potatoes which they would put in are rejected as not up to standard; in these cases, I think their grade standards need revising.

To sum up the position, proper grading is essential if the demand for South Australian grown Potatoes is to increase. Create confidence in the mind of the buyer by consistently giving him well graded produce and the demand will improve. With improvement in demand, better prices generally prevail to the benefit of the grower and the State.

Stabilize the Potato growing industry in this State and so make it better able to meet the keen interstate competition and, one final word to the grower, see that the bag is in keeping with the Potatoes—a true reflex of the contents.

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GLASSHOUSE TOMATOES

Control of Bacterial Canker

THE EXTENT to which Bacterial Canker (*Aplanobacter michiganense*) has developed this season in certain glasshouse Tomato crops emphasises the need for very careful attention by growers in selecting seeds for next year's plantings, states an article in the "N.S.W. Agricultural Gazette."

In some instances glasshouse crops have been so badly affected with the disease that practically no fruit was picked for the market.

Apparently, in these cases, a few scattered plants showed Canker early, and the spread throughout the glasshouses resulted from pruning operations, for it has been conclusively demonstrated that spread may readily occur in this way. Canker had assumed serious proportions in several glasshouses in the metropolitan area by September last.

The majority of glasshouse growers either save their own seed or secure it from neighbours. Some even purchase young seedlings raised by another grower—seedlings which appear clean and vigorous but which may have been raised from Canker-infected seed or on diseased seed beds.

Although it is the custom to select sound, well-formed fruit from vigorous and disease-free plants for seed purposes, this is not sufficient to ensure that the resultant seedlings will be free of Canker infection. Even if only a few affected plants have been

observed in the glasshouse either before or at the time fruit is being selected, that is sufficient to condemn the entire crop for seed purposes.

A few typically diseased plants may result in the spread of Canker to others, and these late-infected plants may not exhibit symptoms characteristic of Canker. The result is that so-called clean seed is being selected from plants, apparently healthy, but actually infected.

Bacterial Canker is a highly infectious and destructive disease. It appears to be increasing in its incidence, and to avoid a repetition of the failures of this season growers must pay more attention to seed selection.

Departmental advice is to obtain seed only from entirely Canker-free and *Fusarium* Wilt-free crops. Further safeguards are:—

(1) To extract the seed by fermentation with the pulp, without water, for at least three days, and

(2) To disinfect the seed in corrosive sublimate solution (½ oz. to 1½ pints of water) for 10 minutes, followed by thorough washing in clean water and drying in a warm place.

The site of seedbeds should be changed each year, and even then it is advisable first to sterilise the soil with formalin according to Departmental recommendations.

Infested land should be rejected for Tomatoes for three years, but in glasshouses sterilisation may readily be effected by steam.

Science and Practice in Fruitgrowing

INCREASING THE YIELD OF ORANGES — GRAFTING AND BUDDING WALNUTS — MULCHING CITRUS TREES — BROWN ROT CONTROL — PREVENTING WASTAGE IN CITRUS — APPLE AND PEAR STUDIES — HASTENING FIG MATURITY — ROOTSTOCKS.

Abstracts from Imperial Bureau of Fruit Production.

THE IMPERIAL BUREAU of Fruit Production, East Malling, Kent, England, publishes valuable information on "Horticultural Abstracts," these being summaries of experiments carried on throughout the world. The following are a few of these "abstracts":— A New Method for Increasing the Yield Capacity of Orange Trees. Russian, Soviet Subtropics, 1938.

In 1937 attempts were made at the Introduction Nursery in Sukhum to decrease the shedding of Orange flowers by removing the pistils from the unopened flowers. The study was made on 39 flowers on the lowest branch of a single tree (variety not stated). Untreated flowers on the same branch and on other branches were used as a control. When the fruits were collected, it was found that of the 39 flowers where pistils had been removed 22 bore fruits, whereas of 35 controls only 1 fruit was produced. Data also show that the average size of fruits from flowers treated thus was larger than that of fruit from control flowers. No seeds were found in fruits from flowers where the pistils had been removed.

The results suggest that large scale trials should prove valuable.

Grafting and Budding the Walnut.

As a result of trials which have been carried on with Walnuts in Germany for some time, the author draws the following conclusions:— Grafting in Glasshouses: The scion takes well on the seedling stock of the common Walnut (*Juglans regia*). Bast may be used for binding grafted material. Waxing at the point of the grafts is entirely superfluous. All common methods of grafting result in a union between stock and scion. Whip-and-tongue grafting has certain advantages over other grafting methods. Grafting at the root-crown should be avoided. Grafts can be made at any other point, provided rootstock and scion correspond in size. Besides the late Winter and Spring months the period from mid-August to early-September is also suitable for grafting. Potting the rootstocks prior to grafting is entirely unnecessary, but after grafting, for which operation the stocks are lifted, the plants are bedded close together under glass. Potting which may be required in some cases, is carried out without difficulty after the union is completed and the scions have begun to grow. 959 grafts made during the trials gave 77 per cent. take.

Budding Trials in the Field.

Budding is carried out during the three Summer months, when 1 and 2-year-old seedlings are chiefly used. Ring budding has proved the most successful, and is the method now employed. In order to facilitate ring budding, special knives have been designed to reduce the danger of bark injury. Recently a simplified method of budding has been introduced, a form of patch budding in which the flap of bark on the stock is retained to cover the bud. The results of bud-

dging are still rather poor, being about 20 per cent. successful.

Trial of Walnut Vegetative Propagation Methods.

Russian, Soviet Subtropics, 1937.

A description of grafting trials with Walnut trees. The experiments were conducted by the Institute of Dry Subtropics in 1936. Over 1,000 buds were made in that year to old Walnut trees and to 2-year-old seedlings in the nursery. The following conclusions are taken from the author's summary:— (1) Well-developed buds (but not those from very vigorous scions) taken from the top of the crown, gave the best take. (2) Budding on old trees gave a better take than that on cuttings or 2-year-old seedlings. (3) The best results were given by late August buddings and the poorest by those done at the end of July. The disadvantage of both August and July budding is that the rapid bud growth is liable to suffer from the frost. (4) Ring budding was the most successful method tried, and resulted in 80 per cent. take.

[July-August as mentioned above would correspond with January-February in Australia.—Editor.]

Mulching of Citrus Trees (N.Z. J. Agric.)

The results of mulching citrus trees over a period of years in the Auckland District are apparent in the smooth-surfaced, dark green foliage and in the smooth clear skin of the fruit. Since mulching was undertaken the quantities of artificial manures necessary have been reduced by nearly half. The practice is to grow Clovers or grass in an adjacent field and place the cut material in late Summer round the trees up to the limit of branch spread.

Brown Rot Control (Calif. Citograph).

The Pest Control Bureau of the California Fruit Growers' Exchange state that a spray composed of zinc sulphate 12 lb., copper sulphate 1 lb., hydrated lime 6 lb., with or without a blood or casein spreader, has approached in effectiveness against Brown Rot of citrus (especially Lemons) the regular 3:3:50 Bordeaux mixture. The spray may be applied up to within a few days of fumigation without risk of burning. This is not the case with Bordeaux, the use of which may result in severe damage after fumigation even when the latter is deferred till several months after the spray application.

Protection of Trees from Ants (Ann. Staz. Agrum. Frutt. Acireale).

The author describes trials of magnesium silicate (or talc), magnesium carbonate, and a number of proprietary substances used for banding trees to prevent the ascent of ants. The first two substances, especially the carbonate, are quite satisfactory, but need frequent renewal. The proprietary substances varied in efficacy and in resistance to liquefaction in the sun's rays and to rain. The trials lead him to suggest that a most effici-

ous substance can be made by mixing the following ingredient in the proportions given and smearing on oil paper round the trunks: powdered manila, asiatic or Indian copal resin g. 350, castor oil D (density 0.938-0.940) litres 0.7, beeswax g. 35. The exact method recommended for mixing is described

The Protection of Citrus Fruits Against Mechanical Injuries during Transport from the Packing Shed to the Ship (Hadar).

The author finds that in its progress from packing shed to ship a case of citrus fruit in Palestine suffers 8 unnecessary concussions, each of which is capable of causing damage to the fruit within. Measures are proposed for eliminating some of these jars, including mechanical loading and unloading, stacking and unstacking.

A New Method of Control of Wastage in Oranges (Hadar).

A new method has been evolved which markedly controls wastage in citrus caused by *Diplodia* stem-end rot and *Penicillium* mould. The method is to place on the stem end by means of a pipette a drop of a disinfectant composed of 13 g. iodine, 10 g. potassium iodide, water 200 c.c., alcohol 800 c.c. Other disinfectants (of which the composition is given) were also tried with somewhat contradictory results. The method is quick and inexpensive and suitable for large scale shipping consignments. At present, however, there is an embargo on the entry into the U.K. of fruit treated by such substances.

The Effect of Pruning on Yields of Own-Rooted and Seedling Rooted Apple Trees. (Proc. Amer. Soc. hort. Sci. for 1936, 1937).

The trees are 8 years old. The varieties are not stated. The trees were on their own roots or on French Crab. They were Winter pruned each year, except 1933, to a semi-leader type of tree, with no heading back of new growth except of wayward branches. Pruning seriously changed the normal behaviour of the trees, decreasing yield and increasing variability. Unpruned trees on seedling Crab have yielded more fruit to date than unpruned own-rooted trees and have shown less variability in yield. In the pruned trees own-rooted trees outyielded and were less variable than those on seedling Crab stock. It is suggested that for nutritional studies on young trees over a period of years,

where yield is concerned, no pruning should be given.

Relative Efficiency of Spur and Shoot Leaves for Fruit Growth of Pears. (Proc. Amer. Soc. hort. Sci. for 1936, 1937.)

On ringed Pear limbs a unit area of shoot leaves resulted in significantly greater fruit enlargement than an equal area of spur leaves in 8 out of 10 experiments. In the other 2 cases the difference was not significant. Shoot leaves had more dry matter per unit area than spur leaves, and a gram of dry matter of shoot leaves seemed to produce 12-29 per cent. more fruit dry matter than did an equal amount of dry matter of spur leaves. No explanation was found for this apparently greater activity of shoot leaves.

On Breeding of Apple x Pear Hybrids. (Russian, Sci. Fruitgrowing, Mit-churinsk.)

As a result of pollinating Apple with Pear varieties (5,785 blossoms) the author obtained seeds. Some hybrids raised from the latter bore distinct features of paternal prepotency. After developing 4 leaves, these seedlings ceased growing, and some of them died. Evidently they had now passed the critical stage of development. During the first growing season the seedlings on the average grew less in height than the maternal plants.

The Hastening of Maturity in Figs by Anointing with Olive Oil. (Anagnostopoulos, P.Th., Horticultural Research, Athens.)

Anointing young green Figs with olive oil advanced maturity by 20-30 days and resulted in an improvement in the fresh-dried fruit ratio.

Studies on New Varieties of Apple Rootstocks. (Tydeman, H. M., Journal of Pomology.)

The author describes 3 trials extending over six years made with Lane's Prince Albert Apple variety worked on 19 selected rootstocks clonally raised from hybrids of 2 dwarfing stocks, Malling No. VIII. (French Paradise) and Malling No. IX. (Jaune de Metz) bred at the John Innes Institution in 1923. In the first units consisted of 15-35 trees on each of 10 stocks with 45 trees on IX. for comparison. In the second units were of 50 trees on each of 9 stocks with controls on IX. and VII. In the third units were of 40 trees on each of 19 stocks with controls on IX. and VII. Results in all three trials agree.

A great variation in vigor was found, trees on eight of the selec-

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tions being definitely less vigorous than those on Malling IX. and those on seven of the selections being definitely more vigorous than those on Malling VII. at 3 years old. It was found with only slight exceptions that the size of the swelling at the union decreased with increased vigor in the tree.

A very clear and consistent relation was found to exist between the dwarfed character and the productivity of the trees, trees on the more vigorous stocks producing less blossom and less fruit in their earlier years than those on the more dwarfing stocks.

Thus in the first year of flowering the trees on the most dwarfing of the series bore many more blossom trusses than the control trees on Malling IX. Data are given of the relative susceptibility of the trees in a single season to leaf scorch, scab, canker, mildew, crown gall and blossom weevil. Little if any evidence is forthcoming of a direct rootstock influence on the degree of attack of any of these on the scion.

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Young Farmers' Clubs

Work in Several Industries

EXCELLENT WORK has already been done by the Young Farmers' Club movement in promoting the interests of land industries in many parts of Victoria. The movement is growing steadily, and the importance of the work being done is generally recognised. The Victorian State Supervisor (Mr. Keddie) is constantly engaged on visits to various clubs, and he reports that enthusiasm is being maintained and the scope of activity extended. Recent reports indicate the range of industries covered.

Ravenswood South.

Fruit culture is the sole object of the Club at Ravenswood South, where magnificent work is being done. The Club has an orchard of 35 trees, which are looked after and studied by the enthusiastic young members. Budding, grafting, spraying, manuring, and the packing and grading of fruit are studied and practised so earnestly and capably that the Club has had numerous successes in competitions. The Club won the Gerrard Shield for fruit packing, and the trophy was presented by Mr. J. M. Ward, Supt. of Horticulture, who congratulated members on gaining outright possession of the shield by winning it three times. The Club is arranging a

special exhibit for the next Royal Show.

Wedderburn Club.

Although there is not the same scope for operations as in other districts, the Wedderburn Club, formed recently, has made an auspicious beginning. The school grounds have been transformed and because of the interest shown by scholars, there has been a marked improvement in their alertness for all lessons. The citizens are co-operating in a manner worthy of emulation in all centres. After a recent visit, Mr. Keddie said that although Wedderburn was principally a mining district, the enthusiasm for land industries was so great that he felt confident of most of the boys being directed to the land in the future.

Animal Research.

Young farmers' organisations will be interested in the announcement that the Australian -Agricultural Council has approved of the proposal to set up an Australian Committee on Animal Production. This action is evidence of the desire of all Governments to improve facilities for making available to breeders of livestock the findings of research workers in relation to rural industry. The committee will comprise one represen-

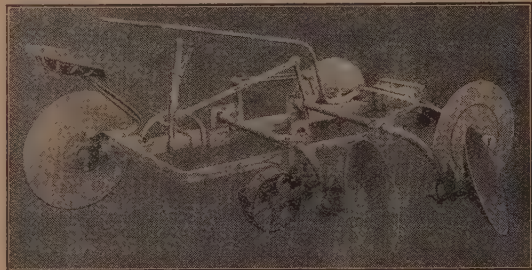
tative of each State Department of Agriculture, one of the Department of Commerce, one each of the Australian, Meat, Wool and Dairy Boards, and two representatives of the Council for Scientific and Industrial Research.

The principal object of the committee will be to prepare a balanced and co-ordinated national programme of livestock improvement, covering research, education and extension, and in this it will co-operate with technical officers of Commonwealth and State organisations. The committee itself will not conduct research. Rather, its purpose will be to direct it, prevent overlapping and waste, and make certain that the conclusions reached by scientific workers are placed before those most likely to benefit. Young farmers' organisations should note this and keep in touch with the committee.

The committee should be in a position to do much useful work. No doubt there are always some who will ignore, if they do not actually resent, advice from scientists. Young farmers' bodies, however, are definitely not of this cult, and at an early date they should give the newly-formed body its full support and co-operation from all centres.

The Australian Committee of Animal Production, if it operates according to plan, will see that, as far as is humanly possible, every producer shall have opportunities for learning something of practical value from research. Whether or no he takes advantage of it rests with the producer, and with young farmers themselves.

"HILLMAN" ORCHARD STRIP PLOW



The steering arms are drop forged from the best mild steel and the main wheels are equipped with ball bearings.

Two medium horses can work this machine all day without tiring. A machine may be obtained for a trial at any time.

Double Furrow

A sturdy, strong plow equipped with reversible discs to enable the operator to plow up to, or away from the trees. Operated by a single lever and with nothing to catch branches of trees. To facilitate the movement of the plow around the orchard the discs are movable and lift clear of the ground.

Further particulars apply . . .

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London — The Inexhaustible Market
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T.R. TOOVEY, PORT OF LONDON AUTHORITY 22 Loftus Street, Sydney

MOHAMMEDAN BLESSING ON FERTILIZERS.

Very large quantities of fertilizers are used in Egypt. The figures for 1936/7 total 595,741 tons. In this is included Chilean Nitrate of Soda, 189,174 tons, an increase of 11,000 tons over the previous year.

In a number of mosques in Egypt, speeches in praise of fertilizing the soil now follow prayers on holy days (Fridays). These addresses are delivered by the Sheikhs, who reverently remind the faithful that "Chilean nitrate is a natural fertilizer, the gift of God, Mightiest of Creators."

Many of the fellaheen (laborers and field workers) during the season (August) sing the following song which is literally translated from the original:

"The sun has risen and its glitter
Has filled the world with radiance.
Flowers have blown and their petals
Reflect the tinge of rosy dawn.

"Joy comes with the morning.
O fellah! Plough; sow and water
your soil,
And happy and merry thou shall be
With the mercy of the Lord Almighty."

The Egyptian land owner is usually well-educated with a good knowledge of agriculture, but the fellaheen is uneducated and frequently illiterate.

The superiority of Chilean Nitrate as a natural product, i.e. the work of nature and not artificial, has been extensively published throughout Egypt. It has a strongly repairing effect on the soil and is not acid forming.

Interesting experiments were conducted at Athens recently. The anointing of young green Figs with olive oil advanced maturity by 20-30 days, and resulted in an improvement in the fresh-dried fruit ratio.

Export & Commercial News

FRUIT SURVEY

World Production and Trade

In "Fruit," issued by the Imperial Economic Committee, is published its annual summary of the statistics relating to the world production of and trade in the principal kinds of fresh, canned and dried fruit.

The estimates available for 1938 indicate that the Apple crops generally were smaller than in 1937 and below average. The United States crop is expected to be some 40 per cent. less than last season's large crop, but production in Canada is again heavy. The output of Pears in the United States, the principal producing country, continues to expand steadily and the estimate for this season's crop indicates a new record. The 1937 crops of Oranges in the United States, Palestine, South Africa and Brazil were all heavy. Production in South Africa and Brazil in 1938 was about the same as in 1937, but the forecasts for both Oranges and Grapefruit in Palestine and the United States show further increases.

Greater Empire Trade.

The review shows that although the world trade in Apples, Pears, Oranges, Lemons and Grapes in the three years 1935-37 was in most cases rather smaller than the average for 1932-34, shipments of these fruits from Empire countries expanded appreciably, except for Apples. In recent years there has been an increase in the exports of Bananas, Grapefruit and canned fruit, particularly from

Empire countries, and in 1937 the exports of each of these fruits and of Oranges and Grapes from Empire sources constituted new records.

Export Expansion.

Changes in the world output of the different kinds of fruit are difficult to measure accurately over short periods, but there is little doubt that since the war the general tendency has been one of expansion, more especially in those countries growing fruit largely for export, and trade has developed considerably, particularly in citrus fruit, Bananas and most kinds of canned fruit. There was a big increase in the trade in Apples after the War, and in the years 1929-33 the average annual exports were more than double those of 1919-23, but in the past four years exports of Apples have been reduced.

British Market Rest.

The United Kingdom imports much more fresh and canned fruit than any other country in the world. Imports into Germany have declined in recent years; nevertheless, Germany is still the second most important market for most fruits except Oranges, and is the largest importer of Grapes. The United States is the principal market for Bananas. A distinctive feature of the United Kingdom trade has been the marked growth of the imports from Empire countries, and in 1937 they accounted for over 61 per cent. of the total supplies.

Victorian Fruit Crops

HORTICULTURAL conditions in Victoria for the month of January, are reviewed in a report from the Dept. of Agriculture.

Fruit crops throughout the State have been affected by the severe heat and scorching winds, and in some places much damage has been done by bush fires.

In districts where irrigation water is not available, deciduous and citrus fruits are showing the effect of the lack of soil moisture, although in some instances good results have been obtained by thorough cultivation, thus conserving the little moisture there was in the soil.

Apples and Pears are small, and many growers are finding it difficult to bring them up to exportable size. Apricot picking was completed during the early part of the month, and the quality of this fruit was below average.

Plums and Prunes have been damaged by sunscald and severe losses have been experienced in all districts. Peaches have stood up to the conditions better than was expected, and although the fruit is small, the quality in most cases is good. In the Mornington Peninsula district, many Apples and Pears were blown down by the strong winds during the month.

Williams Pears are being harvested and good prices are being obtained for these, as well as for all other fruit in the market. Owing to the small sizes of the Pears canneries are accepting 20 per cent. of 2½ in. Williams.

The Orange growing areas being

nearly all irrigated have not suffered as much as non-irrigated districts, but in some groves sun and wind-burn has affected fruit and foliage.

Fumigation for red scale is in full swing and good results are expected despite the hot weather. Owing to the hot weather delays in fumigation occurred in the Swan Hill district.

The citrus crops for the coming season are light to medium for the Navel crop with Grapefruit, Lemons and Valencia Oranges a little heavier.

Excellent prices have been obtained for Valencia Oranges, and there is still a good quantity to be harvested in the Murrumbidgee-Swan Hill area.

Citrus trees are not showing the usual growth at this time of the year, but in most instances have stood up to the conditions very well.

All viticultural areas have suffered to some extent during the recent long heat wave when maximum shade temperatures reached 117 deg. at Mildura, and 114 deg. at Rutherglen.

In the irrigation settlements some scorching occurred and vines on the poorer soils suffered considerably. However, the prospects are very bright for good Currant and Sultana crops. The table Grape varieties are also particularly good and should meet a strong market, particularly if the season continues dry.

The light brown Apple moth has been very prevalent, but the larvae have done less damage than usual.

Production in the Great Western area will be lower than usual, while at Rutherglen many growers estimate the district yield will be at least 60 per cent. below the normal average.

STERILISING APPLE BOXES.

Experiments with Steam.

In a pamphlet issued by the State College of Washington (U.S.A.) Division of Plant Pathology, details are given of experiments in the use of steam for the destruction of Blue Mould spores in Apple boxes. Exhaustive tests were made, and resulted in the following conclusions:

(1) A direct exposure to streaming steam for one minute is sufficient to kill a very high percentage of the spores of *Penicillium expansum*.

(2) Spores that have been dried for two weeks are more readily killed by streaming steam than those which have been dried for a few hours only.

(3) Spores mixed with decayed Apple tissue in contact with Apple box wood are more difficult to kill with streaming steam than spores free from decayed tissue.

(4) Spores between two pieces of wood, as in joints, are somewhat protected from the action of streaming steam, but under the experimental conditions were killed within two minutes.

(5) Spores of *P. expansum* on artificially contaminated and on naturally contaminated box-wood did not differ appreciably in their resistance to streaming steam.

(6) In commercial practice a two-minute exposure to streaming steam of old picking boxes, which are to be used again, would be sufficient to kill all Blue Mould spores present.

Among new companies registered in January, is Apple Cornel Fruit Juices Co. Pty. Ltd., fruit juice manufacturers. The registered office is 43 Neill-street, Carlton, capital £5,000. The subscribers are O. A. Englehart, Neill-street, Carlton and E. Sloan, Neill-street, Carlton.

Make Your Export Produce a Safe Investment by Shipping to and through

SOUTHAMPTON

PEARS and APPLES

A few days saved mean the difference between profit and loss

There are many reasons why you should ship your perishable produce—particularly PEARS—through Southampton, England's most modern port. Here are some of them:—

Substantial local markets with a fruit sales room actually on Southamptons Docks Estate. Quicker and frequently cheaper transit to Southern and Midland Towns. The Southern Railway of England runs express freights from Southampton to all these centres, saving days and money.

London is reached by express freight trains in three hours from Southampton—All fruit unloaded in Southampton to-day will be at Covent Garden, Spitalfields, or Borough Market for early morning market to-morrow, with days saved as against fruit discharged by ships calling at Continental and other outports first. The slight additional cost is altogether outweighed by the tremendous advantages of days saved.

Deterioration is avoided by special arrangements for sorting to mark, and quick insulated trains direct to London.

Southampton cold stores available for storage of produce for local consumption or Midland deliveries. Pears can be discharged from ship to cold store in less than 5 minutes.

Before the next exporting season, consider these advantages, and ask for Southampton Discharge for London Markets.

THE QUICKEST WAY TO BRITAIN'S MARKETS

For rates and all general information, write to the Australasian Agents:

SOUTHAMPTON DOCKS

Owned and Managed by

SOUTHERN RAILWAY OF ENGLAND

Australasian Agents:

H. W. BEVAN & CO. PTY. LTD.

71 YORK STREET, SYDNEY

"DUERDIN" HOUSE, 14-16 BOND STREET, MELBOURNE

HARVESTING OF PEARS.

Stage at Which to Pick.

THE EXACT TIME of picking of any variety of Pears varies, of course, according to the district and the season, but the following hints from a pamphlet issued by the N.S.W. Agricultural Dept., as to

the stage of maturity at which to pick, together with a little experience of the various varieties, should lead to better understanding regarding this phase of marketing operations:—

Many varieties—in fact the majority—attain a much higher flavour and better textured flesh if picked when fairly mature, but still on the hard side, than if allowed to stay

on the tree until fully ripe. Williams is a typical case in point. For cool storing and for export it is especially necessary that Pears be at the correct stage when picked, as in both instances the fruit has to survive a considerable period of cool storage, during which the ripening process, although slowed down, still goes on, and then after removal from

the store the fruit has to be in such condition as to enable it to be sold to the consumer—often a matter of a week or two.

The Right Time.

There are several simple methods by which a grower may determine when a Pear has arrived at the correct picking stage, and these plus a little experience and observation seldom fail to give satisfactory results. They are as follows:—

(1) When the ground color commences to change to a lighter shade.

(2) When the stalk parts readily from the tree if the fruit is lifted upwards and without any great pressure being brought to bear upon it.

(3) When the flesh loses its woodiness and begins to assume its natural crispness and flavor.

The browning of the pips cannot be relied on altogether as a guide to maturity, as in some seasons and with some varieties it is possible for the pips to be brown whilst the fruit is still fairly immature.

As a general rule it is a good plan to make several pickings of a variety, taking the largest each time; seldom, if ever, is all the fruit at the proper picking stage at the same time. By this means, also, the smaller fruit is given a chance to make up, and a grower not only gains in so far as he gets more fruit at this ideal picking stage, but also increases the crop per tree, owing to the increased size of this small fruit as compared with what it was at the time of the first picking.

BOURKE-STREET ICE AND COLD STORAGE.

Centrally situated and convenient both for growers to store and for easy delivery to buyers, this extensive plant offers every facility for efficient storage. Temperature control is constantly watched by expert refrigerator engineers who have had wide experience in handling and storage of every variety of fruit.

Naturally, the co-operation of growers is anticipated in seeing that only sound, clean fruit is packed on the orchards so that storage behaviour will be perfect to both growers' and the company's advantage. With this combined team-work, efficient cool storage results in mutually satisfactory business, and the grower obtains the benefit of being able to withdraw his fruit in perfect condition when required.

All enquiries for space, quotes for period rates and all other information can be obtained by communicating pips to be brown whilst the fruit is with the Bourke-street Ice and Cold Storage Co., at 44 Bourke-street, Melbourne, C.I., or by telephoning Central 2383.

Producers' Co-operative Distributing Society Ltd.

Are now paying a Bonus of 15% on all Commissions charged to regular clients of the Fruit & Vegetable Section for year ending Sept., 1938

Send Your Consignments

TO US

MELBOURNE & SYDNEY.



Cable Address: DAVIS, MELBOURNE.

Code: "ABC," 4th and 5th Editions.

Box, G.P.O. 148B.

J. DAVIS PTY. LTD., Fruit Merchants

8 WHOLESALE FRUIT MARKET

Consignments solicited.
Telephone, F 3232.

One Trial Invited.

Best Prices obtained.

Prompt Advice and Payment.

Bankers: The National Bank of Australasia, 271 Collins Street, Melbourne.

Telegraphic Address: "Listeria," Melbourne.

Telephone: F 6341. Private: Win. 4535.

Codes: Bentley's A.B.C 5th Edition.

IMPORTANT TO GROWERS

Box 555D, Melbourne.

Australia looks to you to produce and sell good fruit, but to PRODUCE GOOD FRUIT and have it badly sold is a reflection on your business ability. To sell well is as important as to produce well. The greatest combination that can exist beneficially is that between a painstaking fruitgrower and a painstaking salesman.

If you have good fruit to market, you will find in the firm of **GEORGE LISTER PTY. LTD.**, the service you require. Established over 50 Years.

GEO. LISTER PTY. LTD.

12 Wholesale Fruit Market, Franklin Street, Melbourne.

(Managing Director: J. R. VAIL)

Bankers: The Commercial Banking Coy. of Sydney Ltd. (Melbourne Branch).

Silbert, Sharp & Davies
Pty. Ltd.

FRUIT MERCHANTS

17 Wholesale Fruit Market
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CONSIGNMENTS OF FRUIT
AND VEGETABLES
Assured Highest Market Rates.

P. A. PATRIKEOS

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Melbourne
Telephone: F 2227.

A. MILLIS & SONS

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Specialty—Prompt Returns. Cheques
every Wednesday. Phone: F 1862

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WHOLESALE FRUIT MERCHANT

Prompt Returns and Sales Notes Daily.

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G. WOOLF

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WHOLESALE FRUIT MERCHANT

& COMMISSION AGENT

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CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED.
Tel.: F1023; Private: JW2528.
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Market Branch.

T. Stott & Sons

FRUIT MERCHANTS

ESTABLISHED 1882.

26 Wholesale Fruit Market, Melbourne. And at VICTORIA MARKETS.

COUNTRY AND INTERSTATE ORDER TRADE SUPPLIED.

SHIPPING No. 41.
PHONE: F 4370.

PROMPT SETTLEMENTS.

CONSIGNMENTS SOLICITED.

Bankers: Bank of Australasia, Melbourne.

Regular Supplies of
Quality Fruit well Packed
and Graded will realize
the Best Prices.

H. LOUEY PANG & CO. PTY. LTD.

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G.P.O. Box No. 795F, Melbourne.

References—E. S. & A. Bank, 225 Swanston St., Melbourne.

Telegraphic Address: GOOD PRICES ASSURED

"PANGANCO."

Cheques Sent Promptly. F 6532.

Tim Young & Co.
Pty. Ltd.

WHOLESALE FRUIT MERCHANTS

18 Wholesale Fruit Market

Growers can be assured of receiving
the very best service and prompt
returns.

Cable Address "TIYOUNG"

A.B.C. Code, 5th Edition.
Box 82a, G.P.O., Melbourne.

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E.S. & A. Bank Ltd.,
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SHIPPING 91
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Telegrams and Cables:
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D. S. LUCAS & CO.

Accredited Selling Agent S.A. Tomato, Celery, and West Australia Tomato Association. Fruit and Banana Merchant, Importer and Exporter, and General Commission Agent.

PROMPT RETURNS.

£1,000 FIDELITY BOND.

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H. & S. FRANKEL

(Established 35 Years)

No. 44 WHOLESALE FRUIT
MARKET, MELBOURNE.

Growers in all States are invited to
send consignments. Highest market
rates and prompt settlements.

Telephones—

Store: F 4874.

Private: F 1555 & FW 8711.

Bankers—

Commonwealth Bank of Australia.
"Growers' Interests further protected
by our Fidelity Bonds."

A. E. PITT

Established 1893.

Member of Wholesale Fruit
Merchants' Association of Vic.

14 WHOLESALE FRUIT
MARKET, MELBOURNE.

Consignments Solicited from all
States.

Growers Will Receive Top Market
Value and Prompt Returns.
Fidelity Bond Guarantee for £1,000

For and Bank Guarantees,
11 and 12 Victoria Market.
Reference—E.S. & A. Bank,
Elizabeth St. Branch, Melbourne.
Phone: F 1824.

DILWORTHS, IVANHOE, VICTORIA.

New Large Cool Store.

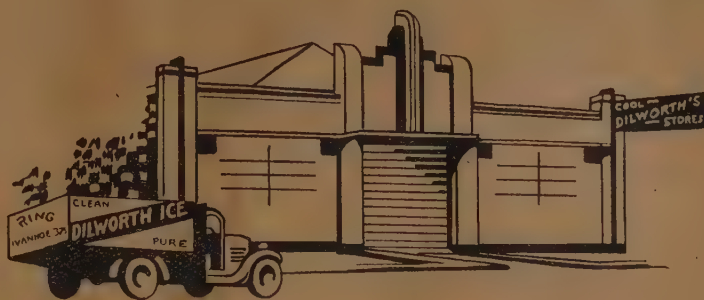
With a fine new brick storage plant having 100,000 cub. feet capacity, the cool storage facilities of Dilworth & Son Pty. Ltd., Ivanhoe, Victoria, are increased to 140,000 cubic feet and, as will be seen from their advertisement in this issue, they offer fruitgrowers the benefit of this modern storage equipment. The new store is directly opposite the ice works and cool storage depot that Dilworths have operated for the past fifteen years.

Included in the storage equipment is well-lighted space for the free use of clients of the company to repack and regrade their stored fruit, and a "Harvey" mechanical grader is also provided free.

The storage plant is under the personal management of Mr. R. Dilworth, Jr., who has had some twenty years of experience in refrigerated storage in Victoria.

All fruit chambers are constructed with brick and "Brewers" cork board insulating, guaranteeing even and correct temperatures. Gravity rollers are fitted and facilitate quick handling of all fruit. All fruit stores are equipped with direct expansion coils suspended from the ceiling and with galvanised drip trays to ensure that no dripage can possibly affect the safe storage of the fruit; 1½ tons of galvanised iron were required for making these drip trays only.

Following several years of experience, Mr. Dilworth has so planned his new cool store that it is the largest single floor within the metropolitan area for storage of Apples. They also pack and market fruit at growers' request for those at a distance from the metropolitan market. All fruit is handled by an expert staff and clients can be assured of satisfactory service.



Dilworth's new cold storage plant at Ivanhoe, Vic.

WESTERN AUSTRALIAN STORMS.

Heavy Potato Losses.

Hail Damage in Some Fruit Districts.

FOLLOWING the Port Hedland cyclone, the South-Western districts of Western Australia were visited by abnormal weather conditions, storms varying in intensity continuing for almost a week. In many parts of the State substantial benefits have resulted, and despite temporary dislocation of road and rail services, and other minor damage at some points, the filling of catchments has been of great relief, and a substantial compensation for pasture deterioration experienced.

The severest rainstorms occurred at Kojonup, and in the Albany-Denmark district. The former was particularly spectacular, six inches of rain falling in four hours; buildings became awash and bridges and culverts were severely damaged, but with dry soil conditions and hilly country the water got away very quickly at most points. In the Albany district the losses were severe, not only in damage to roads and property, but in the flooding of low-lying areas in which Summer swamp ground potatoes were in full growth. It is estimated that £30,000

of losses have been incurred in the flooding of Potato crop areas, in which crops have been entirely ruined.

In the Bridgetown and Boyup Brook districts many orchardists have suffered through hailstorms. In most instances the hail was not very heavy, but has caused marking of a quantity of fruit, rendering it unfit for export. Many orchards escaped entirely, and others suffered very light visitations, whilst others again had three and more distinct hailstorms over five days. Pending a full survey estimates of the damage are difficult to arrive at, but early reports suggest that 20 per cent. of export quantities have suffered in this district.

In the other orcharding areas hail damage was fortunately insignificant, most escaping without any visitation.

A compensating factor in all Apple-growing districts has been the phenomenal and bounteous rains.

Following up a favorable growing season earlier, the wealth of soil moisture resulting from these rainstorms will do a great deal to offset hail losses. With the trees laden with a heavy crop throughout, this benefit will mean a very substantial gain in quantities harvested, although so good have the earlier seasonal conditions been in many areas that despite the heavy load of fruit the trees are carrying many varieties now certain to run unduly over-size.

Fortunately, the comparatively moderate winds, and the fact that maturity was not unduly advanced, have resulted in negligible losses of fallen fruit. The weight of rain caused serious soil wash in many orchards, but despite the inconvenience and cost resulting this is unlikely in most instances to result in permanent damage either to trees or crops.

In common with primary producers elsewhere in the Commonwealth, Western Australians are wondering what has gone wrong with the weather. Such conditions of Summer storms are not within the recollection of the oldest of settlers in the southwestern district of the State.

GRUBBING



**WITH A
"DIGGER" WINCH**

A Man can uproot more Trees and Stumps in
a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

**Thousands
in Use**

It earns its
Famous
LOW PRICE
in a Few Days

Write for
Catalogue



The Port of Liverpool

Fruit from the Dominions is being imported in increasing quantities.

This photo depicts the unloading of a cargo of Fruit from a Blue Funnel liner DIRECT into cold stores from the ship's refrigerator.

H. W. RICHARDS

Representative for the Mersey Docks and Harbour Board.

31 MACQUARIE PLACE, SYDNEY, N.S.W.

Phone No.: B 5200.

DRIED FRUITS NOTES—(Contd.).

DRIED FRUITS OVERSEAS.

Interesting Comment in Trade Circular.

A DRIED FRUITS trade circular just to hand from London contains the following paragraph regarding Australian Sultanas:—

"While it is quite understandable that buyers are loath to accumulate stocks for which they have no immediate outlet, those who look a little ahead and weigh up the prospects after the turn of the year will no doubt realise the expediency of not allowing their stocks to become depleted. The controlling authorities in the Dominions are very much alive to the strength of the position, and have always shown themselves sufficiently astute to take full advantage of similar circumstances. It will not be surprising therefore if they adopt a very firm attitude with a view to ensuring a rising market in the weeks preceding Easter. This certainly is much more probable than any weakness or even the maintenance of values at their present level."

SOUTH AFRICAN CONTROL BOARD.

Basis of Representation.

The Dried Fruit Packers' Association of South Africa is objecting to the basis of representation on the fruit marketing scheme, contending that the packers deserve more than one representative because they control 75 per cent. of the crop. This point has been contested by a spokesman for the South African Dried Fruit Co., of Wellington, who declares that his company handles fully half of the production and that, in any case, tonnage is not the major factor in representation on the Board.

The merchants' point of view is that they are satisfied with a single representative, since they recognise that growers have a right to regulate their own affairs. The danger to guard against was that control was not vested in one section of the producers. They contend that the representation of the producers was not proportionate, and deny that the South African Dried Fruit Co. handled 50 per cent. of the Union's output of dried fruit.

CONCENTRATED FOOD.

High Value of Dried Fruits.

Fruit when dry is a concentrated food, and a pound of dried fruit is the equivalent of several pounds of fresh fruit, as shown by the following table:—

- 5 to 7 lb. fresh Apricots make 1 lb. dried Apricots (pitted).
- 7 to 8 lb. fresh Apples make 1 lb. dried Apples.
- 5 to 7 lb. fresh Peaches make 1 lb. dried Peaches.
- 5 to 6 lb. fresh Pears make 1 lb. dried Pears.
- 2½ to 3 lb. fresh Prunes make 1 lb. dried Prunes.

Dried fruits—including Lexias (puding Raisins), Sultanas and Currants—are graded before packing. Freshness, texture and color are taken into account, besides size, when grading, and purchasers should be careful not to pay high-grade prices for a low-grade product.

Market Notes and Prices

Fruit Prices in the Sydney Market

Survey of Operations for the Period December 2 to January 25, 1939.

(By the Market Representative, Fruitgrowers' Federation of New South Wales.)

EXTRAORDINARY FRUIT SHORTAGE — EXCEPTIONAL WEATHER CONDITIONS — INTERSTATE ARRIVALS ALSO LIGHT — PRICE LEVELS HIGHER THAN USUAL — ORANGES STILL AVAILABLE — CHOICE LEMONS WANTED — TASMANIAN SEASON COMMENCED.

THE PERIOD UNDER REVIEW has been unique, owing to the scarcity of fruit and the high prices that have ruled for both fruit and vegetables. Each year some type of fruit is damaged by weather conditions, and there is always some district that loses heavily as a result of the elements, but 1938-39 has witnessed a succession of losses through the elements in both New South Wales and Victoria, and generally dry conditions accompanied by excessive heat have reduced the size of the residue fruit remaining, with the exception of that from the irrigation districts. Usually a shortage in one State, is largely compensated for by larger supplies from another State, South Australia, even at times forwarding fruit as far as Sydney. This, however, has not been possible this year, although Tasmania

has made an effort in the past week by forwarding seven hundred odd cases of Plums and almost 4,000 cases of Apricots and even a dozen or two cases of Peaches, Cherries and Nectarines.

The vast Sydney market, however, throughout the past six weeks has become increasingly bare of the customary supplies of fruit, the position only being remedied a little at the present time by heavier supplies of Elberta Peaches and nondescript types of Plums from Victoria.

The general public is keenly aware of the fruit shortage and the increased prices that they are asked to pay for fruit. Carriers, agents and retailers are all impressed by the reduced turnover that has been experienced. The growers of early fruit in N.S.W., however, have had a most disastrous time as a result largely of

the gale of December 10, and the blazing temperatures of Saturday, January 14. Hail, heat and wind have all played their part in depriving the fruitgrower of his annual income and so serious is the position with many hundreds of fruitgrowers, that the Government has been approached by the Fruitgrowers' Federation with the object of securing assistance for those in necessitous circumstances. The later the district, apparently the better the crop, and Kentucky, Orange and Batlow districts are expected to forward larger quantities of fruit than the earlier districts. The markets, however, at the present time, are just feeling the effects of increased supplies of a number of fruits and values generally show a slight recession.

Orders for export to the Islands and the East, were particularly good during the festive season and since, but shippers and exporters have experienced great difficulty in securing the necessary fruit. A lull occurred in the export of Oranges to New Zealand from the middle of December until the middle of January, when business was resumed. The total of Oranges exported from this State to all ports in New Zealand, now approximate 142,300 cases for the season, but it is not anticipated that many more will be dispatched. Apples.

Up to 21/- was received for 1938 Democrat, Yates and Granny Smith



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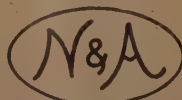
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North Coast Tomato Growers' Association.

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Apples that were retained for the Christmas market and after. The market, however, has been largely bare of colored Apples, with the exception of a few Kirks Seedling, Williams Favorite, Gravenstein and McIntosh Red. Cooking Apples also were scarce, due to loss sustained to early types by the wind storm of December 10, and values of all new season fruit have been at a high level. The first consignment for the season from Tasmania, comprised 657 cases, which arrived this week. No Apples have been available from Victoria up to the present.

Prices for extra fancy, fancy and good: Carringtons (N.S.W.), 6/- to 12/- per bushel; Gravenstein (N.S.W. and Qld.), 6/- to 15/-, well colored to 22/-; Granny Smith (N.S.W.), 8/- to 14/-; Kirks Seedling (N.S.W.), 10/- to 16/-; McIntosh Red (N.S.W.), 9/- to 16/-, well colored to 20/-; New Season Cooking (N.S.W.), 7/- to 13/-; Williams Favorite (N.S.W.), 10/- to 18/-.

Pears.

The usually neglected China Pear appeared to survive the inclement weather and have sold fairly well at 5/- to 7/-. Clapps Favorite from Victoria and this State followed, but were quickly displaced by Williams from the Southern State. Much of the early colored fruit, however, was colored as a result of codling moth stings and speculators with the early fruit, in many instances have been very disappointed. Supplies of Williams from Victoria have been very light, and apparently only small quantities of fruit unfit for canning purposes are likely to come forward. Colored fruit is now much more noticeable and the first drop in value has just occurred. Supplies of N.S.W. Williams have not been considerable, but where the quality was good, satisfactory values were obtained.

Prices: China (N.S.W.), 5/- to 7/- per bush.; Clapps Favorite (Vic. and N.S.W.), 5/6 to 8/-; Williams (Vic.), 6/- to 9/-, colored 6/- to 10/-; Williams (N.S.W.), 6/- to 10/-, colored to 11/-.

Apricots.

N.S.W. supplies finished soon after Christmas, and in fact, very few arrived from any district other than the M.I.A. Only a few came from Victoria, and the shipping industrial trouble prevented Tasmania forwarding until this week. High prices were obtained for most Apricots, and the present Tasmania arrivals are worth from 6/- to 9/- per half bushel.

Bananas.

Supplies of Bananas have been around 12,000 tropical cases per week with the exception of during the festive season when growers apparently did not feel disposed to work. As the month advanced, values improved, at the present time being 14/- to 22/-.

Citrus Fruits.

Grape Fruit.

Local supplies have been chiefly immature fruit, that has been practically unsaleable. The exception to this has been a few cases from the Gosford district which have experienced good request. Both Californian and Palestine Grape Fruit have also been available and for some time past there has been no dearth of this fruit.

Prices: U.S.A., Californian 32/6 per Cal. case, Palestine 30/- per citrus box; N.S.W. local 8/- to 14/-, immature from 2/6 per bush.

Lemons.

Around Christmas time special fruit realised to 14/- when of the

right count, and about January 10 gave evidence of improving. A sudden rise in values followed a general shortage and increased demand on January 17, and by the 19th, country order price was up to 25/-. As a result of these values, every available Lemon was forwarded to the market, and as most of these were plain grade, or damaged by the recent hot weather, values immediately collapsed to the figures quoted below. Interstate supplies of Lemons were available around Christmas time, but recently have not been observed. It is reported that a few Italian Lemons are available at the present time.

Prices: N.S.W., special and standard, 9/- to 12/-, few 16/- per bush.; green, 8/- to 10/-, few 12/-; plain grade, 5/- to 8/-. Heat damaged unsaleable.

Oranges, Valencias: Very satisfactory prices have been obtained for Oranges as the season has advanced, the Christmas market being up to 12/-, while prices steadily improved to the present figure. Very little breakdown has occurred owing to the dryness of the season, and only latterly has fruit shown a marked greenness and become thick at the stem end. Large sizes, that is counts less than 150, have been less popular than fruit of counts 180 to 216, and there are indications that the large fruit may become a little lower in value. Quantities available have been greater than usual, and the size of the fruit has mattered more to buyers than the appearance of the fruit.

Prices: N.S.W., standard, local, 9/- to 14/- per bush.; standard and special, inland, 10/- to 15/-; plain grade, 8/- to 11/-; two bushel crates, 18/- to 20/-.

Grapes.

Light supplies from Queensland, followed the American Grapes, that were available before Christmas, and Queensland is still forwarding Black Hamburg. N.S.W. Grapes received considerable damage from the weather, and the crop is reported to be a light one, at least from metropolitan districts. Supplies are still considerable, although values have receded a little within the past few days.

Prices: Qld., 8/- to 10/- per half bushel; N.S.W., Black Muscat, 12/- to 16/-, few special higher per half bushel; Black Hamburg, 10/- to 12/- per half bushel.

Figs.

The nominal value of these is 3/6 to 5/- per quarter bushel case, but supplies have been small and have arrived irregularly.

Mangoes.

These have been available at all times from Queensland, and the improved types have sold well.

Prices: 14/- to 18/- per bushel.

Melons.

Local Rockmelons were available before Christmas, and by the middle of January, Honeydews, Californian Cremes and Cantaloupes came forward from the M.I.A. It is reported that a large area was planted with Hales Best and providing this fruit has escaped mildew and the hot weather, the season should be an extended one.

Prices: N.S.W. local Rockmelons, 5/- to 8/-, few 10/- per tropical case;

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Tasmania: State Fruit Advisory Board.

Harcourt Fruit Supply Co. Ltd.

New South Wales: Griffith Producers' Co-op. Co. Ltd.

Victorian Central Citrus Assn. Ltd.

Batlow Packing House Co-op. Soc. Ltd.

inland Honeydews, Californian Cremes and Cantaloupes, 8/- to 10/-, few 12/- per tropical case; local Watermelons, 5/- to 12/- per doz., few higher.

Nectarines.

The remnants of the crop marketed by metropolitan growers until lately, were sold at very high prices, up to 18/- being recorded for nine dozen, and nine Nectarines in half-bushel cases; 15/- was frequently obtained, although these prices are not reflected in the values quoted hereunder. Victorian supplies were light, up to 27/6 being obtained for a bushel case. The Young district unfortunately had its fruit damaged by the Rutherglen Fly, and most of it up to the present, has been hard and small.

Prices: N.S.W., local, 4/6 to 8/-, few 12/- per half case; inland, 3/6 to 9/-, few higher per half case; Vic., 8/- to 10/- per bushel.

Plums.

The high values obtained early in the New Year induced much inferior fruit to come to the market, and agents have had more trouble in the disposal of definitely inferior Plums than with any other fruit. Much of the fruit from all sources has of course been small, and from 7/- to 12/- has been paid for local fruit of good size. Supplies of course have been lighter than is customary, and this position will probably continue until the Orange district is forwarding.

Prices: N.S.W., 4/- to 6/- inferior lower per half bushel case, extra large higher; Angelina, 3/- to 5/- few 8/- per half case; Vic. 5/- to 7/-, few higher per bush.

Peaches.

Metropolitan grown fruit has been about two weeks later than usual, and the mid-season types, such as Aunt Becky, Braddock and Carmen, were

not available until after Christmas, the Elberta not appearing until the middle of January, while the Blackburn, Rose Champion and Shanghai are still appearing, the Shanghai being particularly late. Until last week most Peaches since the New Year have sold at from 7/- to 10/- per half bushel, but increased supplies of Elberta from Victoria and the M.I.A. have brought values back considerably. Blackburn and Shanghai, however, are still realising 10/- to 12/- per half bushel. High values have induced growers to market immature fruit and this has not assisted the maintenance of values.

Prices: N.S.W., 5/- to 9/-; Blackburn and Shanghai, 8/- to 12/- per half bushel; local Elberta, 6/- to 10/- per bushel; inland, 3/6 to 7/- per half bush.; Victorian, 7/- to 10/-, few 16/- per bushel.

Passionfruit.

Supplies have come from Queensland, as well as this State, although values until latterly were mostly around 5/- to 8/-. The January 20 saw prices improved to 14/-, but an influx of heat damaged-fruit necessitated calling in processors, and prices are now 3/- to 6/-, with a few to 8/- per half bushel.

Papaws.

Reducing quantities have come forward from Queensland each week, present values being 12/- to 18/- per tropical case.

Pineapples.

These have improved in price as the month advanced, from 10/- to 16/- now being paid, these prices being assisted by the general scarcity of other fruits.

Tomatoes.

Seasonal conditions not only damaged the fruit upon the vines, and shortened the life of the bearing plants, but made impossible also the raising of young plants. As a result

quality of Tomatoes has been very poor, arrivals from Victoria being no exception to this comment. Queensland is forwarding small quantities, but supplies from New South Wales are very light. Tasmania forwarded 168 half bushel cases this week. It is probable that the present scarcity will induce the planting of late crops in many districts where rain has fallen or irrigated water is available.

Prices: N.S.W., 5/- to 8/-, special to 10/- per half case. Vic., 6/- to 8/-, few special to 15/- per bushel. Qld., 5/- to 8/6, few 10/- per half bushel.

VICTORIA.

Melbourne (31/1/39): Wholesale Fruit Merchants' Association prices: Per case: Apples, eating, 4/-, 8/-, choice higher; cooking, 4/-, 6/-. Bananas, double case, 12/-, 16/-; few higher. Cantaloupes, 4/-, 8/-; few higher. Cucumbers, 6/-, 12/-; few higher. Grapes, 6/-, 12/-; choice higher. Grapefruit, 6/-, 15/-; selected higher. Lemons, 7/-, 14/-; selected higher. Oranges, 6/-, 14/-; selected higher. Nectarines, 4/-, 8/-; choice higher. Passionfruit, half case, 3/-, 7/-; few higher. Papaws, 14/-, 18/-. Pears, 4/-, 7/-; choice higher. Peaches, yellow, 4/-, 6/-. Pineapples, 10/-, 14/-; few higher. Plums, 3/-, 6/-; choice higher. Tomatoes, 5/-, 12/-; few extra choice higher.

The Federal Citrus Council of Australia reports:—Market dull; demand limited; quotations nominally unchanged. Sales were: Vals., average standards, 9/-, 12/-; good, 10/-, 13/-; selected, 10/-, 14/-, few higher; specially selected, 13/-, 16/-, odd 17/-; Grapefruit average, 6/-, 10/-; good, 7/-, 12/-; selected, 9/-, 14/-; specially selected, 10/-, 17/-. Palestine Grapefruit, 22/-, 32/- an export case. Lemons, average, 11/-, 12/-; good,

13/-, 14/-, selected and specially selected higher.

Queensland Committee of Direction of Fruit Marketing prices:—Bananas, 9's and 8's, 14/-, 16/-; 7's, 13/-, 15/-; 6's, 12/-, 14/-, few special lines higher. Mangoes, selected varieties, 12/-, 15/-. Papaws, 14/-, 18/-. Pineapples, 10/-, 14/-, few higher.

WESTERN AUSTRALIA.

Perth (27/1/39): Apples: Jon. flats 1/6 to 4/- (colored to 8/6); R.B. 1/6 to 4/6; Cleo. 1/6 to 4/6; Williams Favorite 4/- to 8/6. Citrus: Val. Oranges, flats, 3/- to 8/-; dumps 5/- to 10/- (special to 12/3); Lemons 3/- to 9/6; Grapefruit, dumps, 11/6 to 15/6. Stone Fruit: Plums, Wickson 2/- to 7/- (others from 1/-); Narembreen 5/- to 12/-; special Satsuma to 5/6; others 1/- to 3/6; Peaches 1/6 to 6/- (special, one market, to 14/-); Nectarines, flats, 1/6 to 7/- (special, one market, to 13/-). Grapes, Canon Hall, muscat, open, 4/- to 9/3; closed, 3/- to 4/3; others 3/- to 4/-; colored, open, 3/- to 7/-; closed 3/- to 4/-; Passionfruit, threequarter bushel 9d. to 3/6.

SOUTH AUSTRALIA.

Adelaide (27/1/39): The following prices are supplied by the S.A. Fruitgrowers' and Market Gardeners' Association: Apples: Del. (eating) 6/- to 8/- case, Cleos (cooking) 6/-; Bananas 26/- to 28/-; Grapes, dark, 4/- ½ case; do. (white) 5/- ½ case; Lemons 8/- to 12/-; Nectarines 6/- ½ case. Oranges: Common, 12/- case; Grapefruit 4/- to 4/6; Passionfruit 15/- ½ case; Peaches (white) 7/- ½ case; do. (yellow) 5/- ½ case; Pears (eating) 9/- to 10/- case; do. (cooking) 5/- to 6/-. Pineapples, 13/- to 16/- case. Plums (light) 2/6 ½ case; do. (Damson) 3/6 ½ case. Cases extra.

NEW ZEALAND.

Dunedin (20/1/39): Messrs. Reilly's Central Produce Mart Ltd., report as follows:—Owing to the weather conditions prevailing over the past week, supplies of all lines of fruit and produce have been erratic. In stone fruits, very little dessert quality has been received, most of the lines coming to hand being very firm.

New season's Apples are coming forward, and are realising sound values.

At the recent time ripe Bananas are unprocureable, a further shipment of Samoans ex the "Mutua" is due on January 27.

Oranges are meeting with a better enquiry. A small line of Australian Valencias was distributed, and sold out during the week. The "Port Saint John" is due on the 23rd with a further shipment of Jamaican Oranges and Grapefruit, and a small parcel of Californian Navels will also be arriving next week.

New Zealand grown Lemons are in demand, good quality fruit bringing very high values.

Very heavy supplies of Cherry Plums have been coming to hand. A few late Ettersburg Strawberries are also being received. Any Red and Black Currants coming to hand are bringing satisfactory prices.

Prices (per case): Cal. Grapefruit, 35/-; N.Z. Lemons, 30/- to 35/-; Oranges, Jamaicans, 24/- to 27/-; Australian Vals., 17/6 to 21/6; New Season's Gravensteins, 12/- to 14/-; Cooking Apples, 7/- to 9/- (per half case); Apricots, dessert 5/- to 7/3, jam 3/- to 4/6; Peaches, dessert 3/- to 4/6, jam 2/6; Cucumbers, 5/-; Cherry Plums, 3/- to 4/-; Plums, 3/6 to 4/6; Nectarines, 3/6 to 6/-; Pears, Jargonelle, 4/6 to 5/9.

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This Page for Fruit for Export or Sale on
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The Pig Pen

BREED FROM BIG SOWS.

SOME BREEDERS do not give sufficient consideration to the important feature of size in their breeding pigs.

One of the chief objectives in pig raising is to get pigs to marketable weights in the shortest possible time. To obtain the desired rapid development and still have a finished pig with a light covering of fat, it is necessary to breed from pigs which are big within their class. That is to say, pork type breeding stock should be big animals of their category if their progeny are to grow quickly to porker weights.

Bacon type breeding stock also should be big of their type if their progeny are to develop similarly to baconer weights. The extreme bacon type of breeding stock could, of course, be used to produce fast-growing porkers, but such porkers, under normal feeding conditions, would not be sufficiently mature to give good carcasses at porker weights. Breeding pigs should be big within their type.

Size is inherited in pigs as it is in horses, and trying to grow a small-type pig into an extreme bacon type is like trying to make a pony into a draught horse.

Observations lead to the belief that size within a breed is frequently lost through mating stock before they are sufficiently grown.

FARROWING SOWS.

Recommended Treatment and Rations.

FOR 24 HOURS after farrowing, the sow will settle down as soon as she has re-made her bed, and contentedly suckle her litter. She should not be disturbed, and should not be given any food, as a big feed at this time is liable to cause milk fever.

About half the usual ration the following day is sufficient, a little more can be given to her the next day, and on the fourth day she should be on her usual feed.

Care should be taken to give her a ration of bran or some other laxative, or at least access to good grass. Bran will be found most satisfactory, as when the sow is growing nothing will prevent her littler following her around the run, regardless even of cold, wet weather.

HEALTHIER PIGS.

Important Requirements.

Unless pigs are perfectly healthy they will not be profitable. The following suggestions are contained in the bulletin issued by the New South Wales Dept. of Agriculture:—

1. Keep the yards and runs free of mud holes.
2. Provide clean water.
3. Frequently and regularly clean and disinfect the yards.
4. Keep quarters dry, clean and free from draughts.
5. Feed proper rations.
6. Graze pigs on clean pasture.

Bobby came in at noon looking very distressed.

"Mummy," he said, "is it true that an Apple a day keeps the doctor away?"

"Yes, dear," replied his mother. "Why?"

"Well, I've kept thirteen doctors away this morning, but I'm afraid one will have to come this afternoon."

Poultry Notes

SULPHUR FOR POULTRY.

Useful in Several Ways.

EXPERIENCED poultry-keepers realise the value of sulphur. With phosphorous and lime it is an actual element which, taken in food, plays its own important part in the scheme of internal economy.

Varied Uses.

For feather eating flowers of sulphur can be used very efficaciously in the following manner:—Shake two or three handfuls of lime, stir into it 6 ozs. of flowers of sulphur, add 2 quarts of boiling water, and allow the mixture to boil for a couple of hours. Give it to the hens in their morning mash in the proportion 1:30.

Sulphur, in the form of sulphuric acid, is a component of the far-famed Douglas mixture which, during the moult, is always desirable, given in the drinking water. Sometimes it is more convenient to add simply sulphate of iron to the water—enough to give it a slight taste.

For Scaly Leg one of the simplest of remedies is a mixture of flowers of sulphur and paraffin. For layers and stock birds sulphur is a mild laxative, and if given occasionally to the laying and breeding stock, it does no harm, and often a great deal of good. The easiest way of administering it is to mix it in the morning mash—a handful to every fifty hens.

HINTS FOR POULTRYMEN.

If chicks can be given free range after they are old enough to leave the brooder house, they will develop much faster for stock purposes. But where this is not available, good strong chickens can be grown in yards, provided they are kept exercised and are properly fed.

Feather pulling is a habit acquired generally from idleness. Some say it is from a lack of salt in the feed. Where a moist mash is fed, it is well to add a little salt to the water with which the mash is mixed. Also keep the hens scratching in hay, straw, or leaves for the grain they get, to keep them busy.

Weed out all but the best. This prevents overcrowding, and also raises the quality of the flock. Both mean much towards success.

Sprouted oats are excellent for breeders as greenstuff, and also as

a tonic and stimulant. Be careful to have them sweet and free from sourness, mustiness, or mould. They are good for both chicks and fowls. If sour, mushy, or mouldy, they are unfit to feed, and dangerous.

It is a mistake to begin poultry-keeping with common hens. In them you have all manner of blood—good, bad, and indifferent layers. Whoever heard of a successful poultry farm that was started with any other than pure-bred fowls? Purebreds require no more care than common fowls, and cost no more to keep.

CLEANING THE CHICKEN RUN.

Owing to the attention required by the young stock, the cleaning up and sterilising of the chicken rearing equipment is sometimes overlooked for a considerable time, with the result that the runs become overgrown with grass and weeds and any accumulation of manure is left on the ground.

It cannot be too strongly emphasised how necessary it is to scrub and clean the interior floors and woodwork of the equipment thoroughly, and then to spray with a strong disinfectant solution. It is much more effective to apply the disinfectant to clean surfaces than to spray over the residue of the years.

It is a good plan to remove three or four inches off the surface where the chickens have run over the ground of small pens for years. Leave it exposed to the weather for a month or so, then fill up with good fresh, clean soil. This is particularly advisable if there has been an outbreak of disease during the season.

LEARN FROM MISTAKES.

Road to Success With Poultry.

THE beginner who would succeed in the poultry business must profit by the mistakes he makes—and the mistakes of others. If one continues to make the same mistakes year after year, there is but little hope that the time will ever come when he will have a successful plant. We should make our failures and mistakes the stepping stones to success, but if we do the same things over and over again that we have already found by experi-

SOUTH AFRICAN FRUIT.

Contract with Germany.

In January, the South African Deciduous Fruit Exchange concluded a contract to supply Germany with 60,000 boxes of Pears, Apples and Grapes, making Germany the Union's largest alternative market after Great Britain. The prices decided upon are 8/- a box for Apples, 6/6 for Pears and 4/3 for Grapes. The buyers will pay the freight. Owing to a short Apple crop, difficulty is anticipated in fulfilling the contract.

For some time past the Australian Apple and Pear Council has been in contact with the Federal Government with a view to making a trade agreement with Germany, and particularly for the arranging of Australian Apples to be received in Germany.

In view of the above information as regards South African fruit entering Germany it is hoped that action will be taken to reopen the trade in the export of Australian fruit to Germany.

APPLE TREE PRUNINGS.

A project is under consideration for the construction of a pulp and paper mill in Canada to produce expensive grades of paper from the prunings of Apple trees, says the "Empire Review."

From 1,500 to 4,000 lbs. of Apple tree prunings are said to be produced each year on an acre of orchard. It is estimated that Canada has millions of acres of fruit lands in closely-planted areas, and that raw material might therefore be utilised in the proposed mills far more cheaply than existing sources of material. Apple prunings are said to be cheaper than the wood pulp ordinarily used.

ence to be wrong, we shall never attain our goal.

Experience is indeed a dear teacher, but many times the price is worth the knowledge gained. If with each succeeding year we get better results, it is because we are profiting by our experiences. Knowledge gained in this school is worth much to us if we will remember what we have been taught. Keep your eyes open for the thing that proved disastrous on some previous occasion, and never repeat it.

SPECIAL NOTICE TO FRUITGROWERS

In response to numerous requests from growers for information as to who are members of the

**All Members
under
Fidelity Bond**

Wholesale Fruit Merchants' Association of Victoria

the following list is given. All are members of the above Association, and are registered firms carrying on business in the

WHOLESALE FRUIT MARKET, MELBOURNE.

STAND NUMBERS ARE AS INDICATED IN PARENTHESES.

T. STOTT & SON (26).
H. L. E. LOVETT & CO. (23).
A. E. PITT (14).
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W. S. TONG (31).
SILK BROS. PTY. LTD. (24-25).
J. G. MUMFORD (35).
GOLDEN VALLEY FRUIT CO. PTY. LTD. (15).
J. W. ROSS (13).
H. M. WADE & CO. (21).
DAVID SMITH PTY. LTD. (3).
SILBERT SHARP & DAVIES PTY. LTD. (17).
WATKINS FRUIT COMPANY PTY. LTD (5)
P. A. PATRIKEOS (36).

G. WOOLF & SONS (29-30).
R. CORNISH & SONS (5).
J. HYMAN & SON (51).
HERBERT WILSON PTY. LTD. (10).
FRANK BOOTH & SONS PTY. LTD. (16).
GEO. LISTER PTY. LTD. (12).
TIM YOUNG & CO. PTY. LTD. (18).
F. W. VEAR PTY. LTD. (28).
YEE HOP LOONG & CO. (32).
H. LOUEY PANG & CO. PTY. LTD. (4).
WING YOUNG & CO. (38).
D. MENTIPLAY & CO. PTY. LTD. (27).
PRICE & KING PTY. LTD. (2).
REGAN & KENNY (Successors to Wm. Sweeney). (33).

Correspondence is invited by the Association.

Office: 21 Wholesale Fruit Market,
Queen Street, Melbourne. Phone: F 4805.

QUEENSLAND

PEANUT INDUSTRY'S PROGRESS — ROAD v. RAIL TRANSPORT —
PINEAPPLES FOR THE SOUTH.

(From a Correspondent.)

BEFORE 1924, Peanuts were not regarded seriously as a potential industry. In that year a Peanut Board was formed, consisting of growers. In its first year the Board had 100 growers listed, with 691 acres, and the yield was 231 tons, valued at £10,657. Continuous progress has been made since then, and in 1936-37 (the last year for which complete figures are available), there were 850 growers with 15,155 acres, producing 7,292 tons, valued at £199,263. Last year the Government opened new silos costing £60,000 at Kingaroy. The growers will repay this amount by levies collected by the Board, and will thus own the plant.

Fruit by Road Transport.

The problem of rail versus road transport of fruit from the Granite Belt to the Brisbane markets has become acute. The main argument in

favor of road transport is that the lorries call at the orchards and take fruit direct to the agents' section of the market. At first sight this seems to be the ideal method, but it has serious disadvantages. Lorries cannot move freely in the markets, and as they have deliveries for several agents it means that some agent must be penalised by late delivery. Lack of thoroughness in attending to dockets also causes trouble. Another important point is the fact that rail loadings are known the previous evening, but there is no knowledge of the quantity sent forward by road, and therefore agents have no means of arriving at a basis of price fixing advantageous to growers.

Price for Factory Figs.

Fig growers who received 1½d. per lb. for factory Figs last year endeavoured to have the price raised to

2d. After discussion and hearing a statement of the position from the canner, a motion was carried unanimously that the price should be 1½d. It was agreed that the control of factory Figs should be continued for another year as from January 26, 1939.

Supplies of Plums.

Canners of Plums have received most of the tonnage required for the season. Growers' estimates show that late Plums amount to only 16 per cent. of the total, and it has therefore been decided that factories will take further supplies until these exceed factory outlet, when allocations will be reverted to.

Pineapples for the South.

Officers of the Department of Agriculture emphasise the importance of packing only good class matured Pineapples for market. For shipment to southern markets, Pineapples should not be picked until there is a distinct sign of color at the base of the fruit. None but good quality fruit, free from sunburn, mechanical injury, or insect damage, and which are reasonably assured of being free from water blister, should be packed.

Packing in woodwool is much preferable to grass. Packing to a nice grade is also in favor of a consignment. Malformed fruits should not be packed. Cleanliness in the packing sheds will keep fruit free from most of the troubles that influence market values.

MARKETING BANANAS.

Careful Handling Pays.

BANANAS that have been cut and left exposed to the sun for only a short period soon become unfit for sale, and eventually the pulp is reduced to a soft, soppy condition. Cutting should be done in the early morning, before heat becomes severe, and the fruit should be kept completely covered from all sun.

The greatest care in handling is necessary. The less it is handled the better. On cutting the bunch it should not be laid at the foot of the stem, which usually means it rests on a bed of sticks and dead weeds. A bed of leaves is easily and quickly formed if the bunch must be set down in the plantation, although a better plan is to carry it straight into the shed or to the end of the wire and there place it upright on bags or trash, with the stalk leaning against a rail provided for the purpose. In this way, possible damage will be reduced to a minimum.

Drain After Dehanding.

On being dehanded, the fruit should be allowed to "drain" for a few hours. Packing immediately after dehanding sweats the fruit in the case and makes bruising much easier. Care should be taken to ensure that fruit which is "sprung" or in the early stages of ripening is not packed, as it will quickly be reduced to pulp and be unsightly in a case of otherwise sound Bananas. No fruit should be packed for Southern markets from bunches in which some of the fingers are already showing color indicating ripening. The fruit should be dehanding just at the collar joining the fingers to the main stalk. The most suitable knife for this work is one of a sharp, flexible, and very narrow type.

How Not to Do it.

Tearing the Bananas apart endways often peels part of the skin from the fruit and also bruises the stem, thus setting up an entrance for organisms which cause blackend. The correct method of separating into singles is to grasp the cluster firmly with both hands at the stem end, then twisting one hand forwards and the other backwards, the fruit is separated easily and without any damage to the stalk end.

Stack in the Shade.

On completion of packing the cases should be packed on their sides in a cool, shady position to await transport to rail or market.

Should it be desired to use the "cluster" pack, the same method should be adopted, separating three or four instead of the single finger. If a cluster of three or five is used, a single Banana should be added to make it a four or six. The secret of clusters is to have the fruit in twos.

Sam the forger hurled the boots that he had been wearing to the other side of the room.

"What is the matter, Sam?" asked his wife.

"The boots are too tight for me," growled Sam.

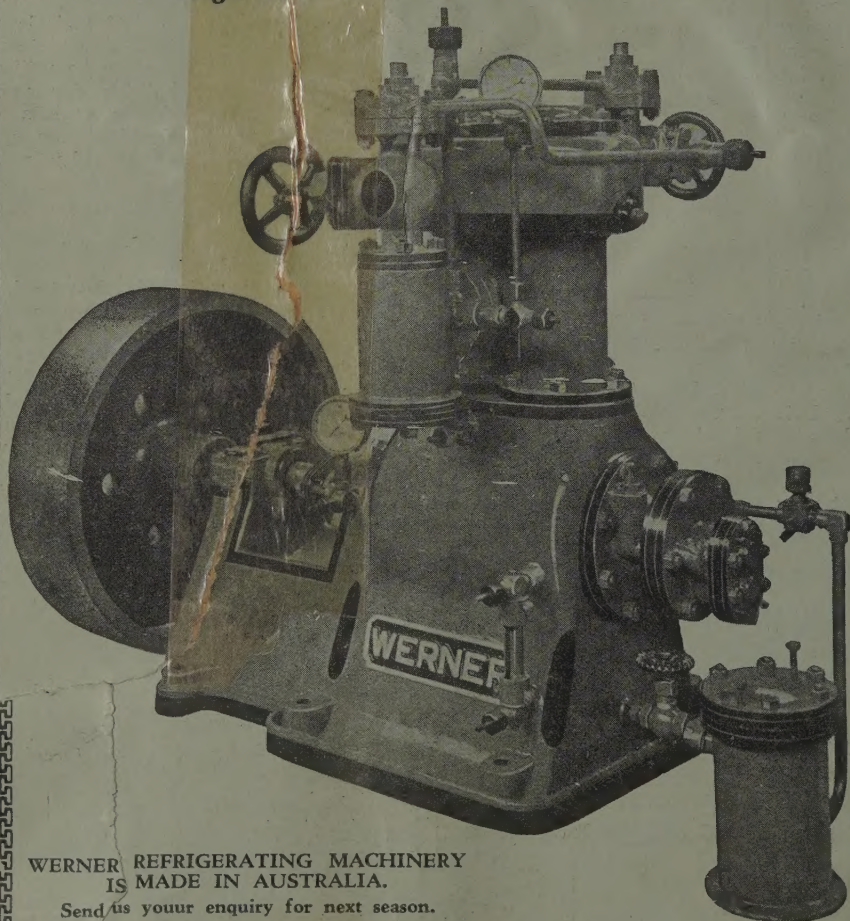
"Never mind," she said soothingly. "I'll take them back to the shop and ask them to return your money."

Sam looked astounded. "Return it!" he exclaimed, "after all the trouble I've had to get rid of it!"

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S.A.:

W. J. WHITE,
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